A cross-sectional survey of rider and horse demographics, and the feeding, health and management of Pony Club horses in New Zealand

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Abstract

A cross-sectional survey was conducted to describe rider and horse demographics, and the feeding, health, and management of horses and ponies involved with Pony Clubs in New Zealand. An online survey collected information from members of the New Zealand Pony Clubs Association between 1st November 2012 and 31st January 2013. A total of 502 respondents completed the survey. Most riders were female (95%; 455/481) and were ≤16 years of age (74%; 357/481). Decisions on feeding and management of horses were rarely made by the rider alone (26%; 124/476). The rider's parent or person responsible for the horse were often included in the decision-making, which occurred consistently across all age-groups ≤16 years (P<0.001). Over half (53%; 252/475) of the respondents' families had more than 20 years of equine experience. On a scale of 1-9, the median body condition score (BCS) of the nominated Pony Club horses was six (interquartile range 5-6), and only 22% (98/446) of respondents indicated that their horse was overweight (BCS ≥7/9). More than 80% of horses were managed on pasture throughout the year, with 24-hour access to grazing each day. In addition to pasture, 82% (409/502) of respondents fed their horses a combination of commercially available equine feeds, including premixed feeds, cereals, and conserved forages. Overall, owners of Pony Club horses reported few health issues associated with their horse.

Keywords: Pony Club; horse; pony; demographics; feeding; health; management

Introduction

The non-racing equine population in New Zealand consists of sport horses (used for the Olympic disciplines of dressage, eventing and show jumping), and recreational horses (horses and ponies primarily used for recreational activities, pleasure riding and companionship). However, the two groups may not be mutually exclusive, as horses may be used for multiple purposes (e.g. the Pony Club horse). Within the non-racing sector, previous research has focused on examining the production and reasons for wastage of sport horses (Rogers & Firth 2005), and relatively little attention has been paid to recreational horse populations (Rosanowski et al. 2012a).

The New Zealand Pony Clubs Association (NZPCA) is an organisation that promotes horse riding and companionship, and educates young people to develop horsemanship skills. It offers competitions across a wide range of disciplines, providing experience before entry into registered equestrian sport. Currently, the NZPCA is the largest junior equestrian organization with ~9,000 registered members across New Zealand (Anonymous 2012).

In New Zealand, most horses are managed on pasture all year round, which provides a unique set of management challenges when compared to horses managed intensively in stables (Rogers et al. 2007). In Pony Club and recreational horse populations, surveys have identified concerns with the nutritional management of these horses and the prevalence of obesity and behavioural problems (Buckley et al. 2013; Ireland et al. 2013). Hoffmann et al. (2009) reported that many recreation-horse owners in the USA lacked knowledge on equine nutrition. The level of nutritional knowledge within recreation-horse owners in New Zealand, and who makes the feeding and management decisions for the horses and ponies ridden by children within the Pony Club association, is currently unknown.

The objective of the study was to conduct a cross-sectional survey to describe the demographic characteristics of the NZPCA population of riders and their horses, describe the general feeding and management of the horses and ponies ridden by members of Pony Club (PC horses), and investigate the owner-reported prevalence of nutrition-related health conditions.

Materials and methods

The target population for the survey was riding members of the NZPCA (n~5090, Anonymous 2012). The survey was designed and implemented online using the Qualtrics™ Survey Research Software (Qualtrics 2012, Utah, USA), and consisted of 50 open- and close-ended questions examining rider demographics, equestrian experience and the health and management of PC horses. Riders ≥16 years of age and the parents of riders <16 years of age were eligible to participate in the survey. Information was collected about the rider and a nominated PC horse. Parents with multiple children at Pony Club were requested to complete a separate survey for each child, with their individually nominated PC horse.

Data were collected over a period of three months from 1st November 2012 to 31st January 2013. The survey was advertised via an article containing a hyperlink to the questionnaire in the November 2012 NZPCA e-newsletter, which was also placed on the NZPCA website (www.nzpca.org.nz). Emails were sent via the 16 NZPCA regional administrators and a social network page was created on Facebook (www.facebook.com) to further publicise the study. Three reminders (at 30, 60 days and one week before closing) were sent via e-mail and social media, and eligibility for a prize draw was included at the end of the survey to encourage participation.

Table 1 Demographic data of riders obtained by an online survey of members of the New Zealand Pony Clubs Association.

Variable	Proportion of respondents % (n)
Geographical region (N=502)	
Upper North Island	50% (253)
Lower North Island	28% (141)
South Island	22% (108)
Period of Membership at Pony Club (N=477)	
< 2 years	8% (36)
2-4 years	29 (137)
5-7 years	28% (135)
8-10 years	21% (98)
>10 years	15% (71)
Rider's age (N=481)	
≤10 years	21% (101)
11-13 years	23% (110)
14-16 years	30% (146)
≥17 years	26% (124)
Highest riding certificate attained (N=481)	
None	22% (104)
D or D+	35% (169)
C or C+	32% (154)
B, A or H	11% (54)
Decisions on feeding and management (N=476)	
By rider alone	26% (124)
By parent or person responsible for the horse	45% (213)
By rider and parent or person responsible for the horse	29% (139)
Respondent or family equine management experience (N=475)	
<2 years	7% (32)
2-10 years	26% (122)
11-20 years	15% (69)
>20 years	53% (252)
Period of ownership of the nominated horse (N=453)	
< 1 year	31% (139)
1-3 years	47% (214)
4-6 years	13% (59)
7-9 years	5% (24)
≥ 10 years	4% (17)

Data were extracted from the software and were examined for inconsistencies and outliers via exploratory data analysis (MS Excel 2010, Microsoft Corporation, USA). Lifetime, adult, and casual members, and respondents that did not complete the first five questions were considered ineligible responses, and were excluded from the dataset. The body condition score (BCS) of the nominated PC horse was reported with reference to a standard 9-point-scale chart that was provided in the survey, and a BCS ≥7 was considered overweight. Commercially available premixed-feed varieties were categorised into low-performance, leisure and maintenance feeds, or medium to high-performance and growth feeds, based on the digestible energy (DE) reported by the feed manufacturer.

The data were analysed in STATA version 12.1 (Stata Corp, College Station, Texas), and simple descriptive statistics are presented for parametric and non-parametric data. Categorical data are presented as count and percentage. The denominator for categorical variables was determined on a per-question basis, and missing values were due to "non-response" or "no" to the question. As respondents were given the option to select multiple answers within a question, the total percentage for certain categorical variables does not add-up to 100%. The significance of associations between the variables "Decisions on feeding and management of PC horses" and "rider age-groups" was assessed using Chi-squared tests.

Results

A total of 699 respondents attempted the online survey. After removal of ineligible and incomplete responses, 502 responses were included in the analysis, indicating a completion rate of 72%. Responses were obtained from all 16 NZPCA regions across New Zealand. The majority of responses (62%; 312/502) were from the parents or guardians of Pony Club riders that were <16 years of age.

Most riders were female (95%; 455/481), and had been members of Pony Club for >2 years (Table 1). The majority of riders (57%; 273/481) had either no certificate or had low-level (< C level) riding

certificates. Decisions on feeding and management of horses were rarely made by the rider alone (Table 1). The rider's parent, or person responsible for the horse, often made the management decisions or were included in the decision-making, which occurred consistently across all age-groups ≤16 years (P<0.001). Few respondents (7%; 32/475) indicated that they (or their families) had <2 years of equine management experience, with just over half indicating >20 years of experience.

The median number of horses owned by a Pony Club member was three (interquartile range [IQR] 2-4). Of the nominated horses included in the survey, most had been owned for ≤3 years (Table 1), 56% (262/468) of which were classified as ponies (≤148 cm wither height). The median age of horses was 12 years (IQR 8-15), just over half were geldings (56%; 264/468) and there were 23 descriptors provided for breed; 50% (235/468) of which were categorised as mixed-breed horses and ponies. On a scale of 1-9, the median BCS was six (IQR 5-6), and only a few respondents reported that their horse was overweight (22%; 96/440).

The majority of horses were ridden (schooling or hacking) ≥3 times per week (82%; 370/451), for a median duration of 60 (IQR 45-60) minutes per session. In addition, PC horses were involved in a number of activities and/or competitions; the most common were Pony Club rallies (87%; 390/448), dressage (59%; 264/448) and show jumping (57%; 254/448).

The majority of horses were kept on the owner's property (69%; 322/468) or on a lease block (31%; 146/468). Most horses (85%; 425/502) were managed at pasture (Table 2). The median paddock size was 0.81 hectares (IQR 0.40-1.42) with most horses kept in groups of three (IQR 2-4). At least 80% (337/420) of the horses had 24-hour access to grazing pasture all year round. The remaining group had <6 hours of access to pasture (27%; 22/83), spent approximately 12 hours on pasture and 12 hours stabled or yarded (55%; 46/83), or were stabled or yarded for most of the day (18%; 15/83). Pasture quality was commonly managed by cross grazing with sheep or cattle and/or topping. At least half of the respondents picked-up horse manure from the paddock and/or harrowed as

Table 2 Management of pasture and feeding practices of Pony Club horses obtained by an online survey of members of the New Zealand Pony Clubs Association.

Variable	Proportion of respondents % (n)
Pasture Management	
Type of grazing provided to the nominated horse (N=426)[1]	
Set stocked	14% (59)
Rotation	73% (312)
Strip	54% (228)
Type of pasture provided to the nominated horse (N=415)	
Dairy	17% (69)
Sheep and beef	35% (144)
Horse	23% (94)
Other	11% (47)
Don't know	15% (61)
Pasture management (N=414)[1]	
Cross graze	64% (264)
Pick-up horse manure	59% (246)
Harrow	50% (209)
Topping	42% (172)
Supplementary feeds	82% (409/502)
Cereal grains[1]	35% (143/409)
Barley	73% (105)
Oats	30% (43)
Maize	6% (9)
Other grain and grain-by-products	22% (32)
Other fibre sources[1]	29% (119/409)
Sugar beet	58% (83)
Copra	25% (36)
Commercial premixed feeds[1]	79% (322/409)
Low performance, leisure and maintenance	54% (173)
Medium-to-high performance and growth	77% (249)
Conserved forages	98% (402/409)
Chaff[1]	72% (294/409)
Lucerne	52% (154)
Meadow	34% (99)
Oat and oat-straw	27% (78)
Lucerne and meadow mix	14% (40)
Other chaff	6% (18)
Hay[1]	84% (345/409)
Meadow	92% (317)
Lucerne	13% (43)
Other hay	10% (33)
Fermented forages	50% (206/ 409)
Commercial haylage	79% (163)
Locally-made haylage	21% (43)

[1]A respondent could have selected multiple options in a sub-category

a parasite control measure (Table 2).

In addition to pasture, most respondents (82%; 409/502) fed their horses supplementary feeds. A minority of respondents (n=143) fed cereal grains, while the majority fed a variety of premixed feeds (n=322) and conserved forages (n=402), either alone or in combination with other feeds (Table 2). The majority of respondents (n=249) fed premixed feeds marketed for low performance, leisure and maintenance (n=32 varieties, mean DE 12.1 MJ/kg DM [8.5-14.0]) and 173 respondents fed premixed feeds marketed for medium-to-high performance and growth (n=20 varieties, mean DE 13.97 MJ/kg DM [12.0-17.8]). Thirty-five per cent (18/52) of these premix varieties were marketed as "cool feeds" (mean DE 12.8 MJ/kg DM [11-17.8]) and were fed by 77% (247/322) of the respondents. Most respondents (82%; 410/502) fed at least one type of supplement, the most commonly used was a mineral and vitamin mix (63%; 260/410).

Less than half of the respondents knew their horse's body weight (45%; 210/462), and of those that provided a weight, half had guessed the horse's weight (51%; 108/210), 39% (81/210) used a weight tape, and only 10% (21/210) had weighed their horse on a set of scales. Most horses were shod (67%, 248/372). Horses were trimmed or shod a median number of eight times per year (IQR 6-10), which was typically done by a farrier (78%; 123/157 and 94%; 112/119, respectively).

Anthelmintics were administered to most horses (99%; 421/423) at a median of four (IQR 3-5) times per year and half (55%; 183/331) of the horses were vaccinated (Table 3). Most (90%; 358/397) horses received a dental examination at least once a year, which was more commonly performed by an equine dentist rather than a veterinarian. Less than half (44%; 211/485) of the respondents identified a health issue associated with their PC horse. The conditions reported ranged from obesity, colic, laminitis, grass staggers, and gastric ulcers, to a variety of injuries and minor conditions (Table 3). A veterinarian was reported to have examined most cases of colic (73%; 19/26) and gastric ulcers (67%; 12/18), but the majority of the reported cases of obesity, laminitis, and grass staggers, had not been examined by a veterinarian.

Table 3 Preventive care and owner-reported health issues of Pony Club horses obtained by an online survey of members of the New Zealand Pony Clubs Association.

Variable	Proportion of respondents % (n)
Preventive health care	
Anthelmintics	99% (421/423)
Vaccinations [1]	55% (183/331)
Tetanus alone	21% (39)
Strangles alone	<1% (3)
Both tetanus and strangles	23% (42)
Did not specify the type of vaccine	54% (99)
Dental examinations	90% (358/397)
By equine dentist	68% (111)
By veterinarian	30% (49)
Owner-reported health issues[1]	44% (211/485)
Obesity	14% (29)
Colic	12% (26)
Laminitis	12% (26)
Grass staggers	12% (25)
Gastric ulcers	9% (18)
Metabolic and endocrine syndromes	6% (12)
Other (injury and minor) conditions	36% (75)

[1]A respondent could have selected multiple options in a sub-category

Discussion

This study aimed to describe the rider and horse demographics, and the feeding, health, and management of PC horses in New Zealand. The survey responses appeared to reflect the population spread, and the previously estimated demographics of Pony Club participants across New Zealand (Anonymous 2012). However, the results of the study may present some limitations due to recall and non-response bias.

Many of the parents had considerable (>20 years) equine experience and were actively involved in the decisions made on the management of PC horses. This is similar to the findings of Buckley et al. (2004) in Australia, and indicates that many parents in our survey had significant prior equine experience, before their children became involved in Pony Club. In contrast, a poor understanding of equine nutrition and management was reported in a survey of horse owners within the USA (Hoffman et al. 2009).

The majority of horses were managed continuously on pasture throughout the year, and there was no seasonal variation in the hours of grazing pasture. This finding is in contrast to Hotchkiss et al. (2007), and may be a reflection of the temperate climate and production use of PC horses in New Zealand (Hoskin & Gee, 2004). The horses with restricted access to grazing pasture were mostly provided 12:12 hour-rotations, which was similar to that reported in the United Kingdom (Wylie et al. 2013), and possibly reflects ease of management for the parents, given that most horses were managed at the home property.

From the data collected, we were unable to quantify the pasture dry matter (DM) available to, or consumed by the horses. The inability to quantify feed intake is a difficulty with pasture management of horses (Hoskin & Gee, 2004). This may be a reason for the large number of respondents that provided supplementary (grain or premixed) feeds in addition to pasture. In commercial equine production systems, supplementary feeds are usually provided at a set quantity and the remaining daily

energy requirement is met with pasture (Rogers et al. 2007). Within the Pony Club population, the provision of supplementary feeds were at much lower quantities, in comparison to that fed for growth and performance in production systems; but appeared to be offered due to a similar motivation to "balance the ration". A number of the premixed feeds fed to PC horses in our study were marketed as "cool feeds", which had a DE content similar to that of medium-to-high-performance and growth feeds. This choice of feeding may reflect the perception of the respondents that these feeds provided additional energy without the associated "heating" effects of some traditional feeds such as oats or racehorse premixes.

Most horses were ridden ≥3 times a week for an average duration of 60 minutes, and were actively involved in Pony Club rallies and other competitions. This level of activity may explain the reason why only a few horses had higher BCS (≥7/9). It is likely that the owners actively tried to maintain an ideal BCS (perceived) and used BCS as a measure of horse health (Buckley et al. 2004).

A study in the United Kingdom reported that 32% of horses and ponies had a long-term or recurrent health condition (Ireland et al. 2013). In contrast, few health issues were reported in our study. A primary reason for this could be the management of horses on pasture, which appears to be associated with a lower prevalence of health issues such as colic and respiratory conditions that commonly occur in stabled horses (Perkins et al. 2005). Alternatively, it may be that the health issues in the current survey were under-reported, as owner-reported prevalence may be subject to recall bias, and has been shown to differ to that reported by a veterinarian (Ireland et al. 2011).

The frequency of providing regular preventive health-care such as dental examinations, hoof care, and the administration of anthelmintics, was high in the present survey, which was similar to that reported for non-commercial horses in New Zealand (Rosanowski et al. 2012b). However, the level of vaccination use was low by international standards (Ireland et al. 2013). This low vaccination-rate possibly relates to the low prevelenace of infectious equine diseases within New Zealand (Anonymous 1989).

The study has provided baseline information on the demographics and management of PC horses in New Zealand. In contrast to similar horse populations in other parts of the world, the results of the present survey showed that horses used at Pony Clubs in New Zealand were proactively managed on pasture by experienced owners.

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