## ORIGINAL RESEARCH



# Cross-sectional study of UK horse owner's purchase and euthanasia decision-making for their horse

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#### **Abstract**

**Background:** This cross-sectional study aimed to investigate factors affecting horse owners' purchase and euthanasia decisions that had been identified in a qualitative study.

Methods: An online survey on horse owners' purchase and euthanasia decisions and experiences was distributed using snowball sampling. Inclusion criteria were previous experience of purchase or euthanasia decisions. Descriptive data analyses (mean, median, mode and frequency percentages) were performed.

Results: There were 451 participants from the UK and Ireland, 97% were female with a median age of 45 years. Participants most frequently did not seek any advice when deciding what type of horse to purchase (38.6%, 169/438) or if it was priced appropriately (48.7%, 214/439). Most participants were satisfied with their purchase and would purchase their horse again (84.9%, 370/436). The most frequent reasons for euthanasia were injury/illness with low chance of survival (55.2%, 201/364), poor quality of life (42.6%, 155/363) and long-term injury (35.7%, 130/364). Most participants sought advice or guidance when making end-of-life decisions (87.5%, 328/375), and 55% (243/440) had a euthanasia plan in place.

Conclusions: Owners show limited advice-seeking behaviour on key aspects of purchase decisions. Owners frequently seek advice on euthanasia decisions, and the majority of decisions were based on welfare concerns.

#### **KEYWORDS**

decision-making, euthanasia, horse owner, purchase, survey

## INTRODUCTION

The horse-human relationship can have a significant impact (both positive and negative) on the decisions that horse owners make for their horses. Horse ownership requires a significant commitment from the horse owner, in terms of time, finance and physical and emotional input. A previous study conducted 21 interviews across 11 horse owners around their purchase and euthanasia experiences, and identified a number of factors that may affect their decision-making.1 Interviews enable an indepth exploration of motivations and experiences,<sup>2</sup> but only represent a small proportion of the total population. The themes arising from the interviews therefore required evaluation across a larger

population of horse owners, with wider range of experiences and relationships with their horse. The objective of this study was to determine factors that may affect horse owners' purchase and euthanasia decisions, through an online survey of horse owners.

## **MATERIALS AND METHODS**

# **Study population**

The cross-sectional survey had a target population of all types of horse owners or carers who had previous experience with purchasing or euthanasia of their horses and were 18 years of age and over.

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https://doi.org/10.1002/vetr.56

Vet Rec. 2021;e56.

# Survey development

The survey schedule was developed and piloted by three veterinarians and four horse owners, and modified according to feedback. The final schedule consisted of six parts: (1) Introduction, (2) participant consent, (3) participant demographics, (4) pre- and post-purchase experience and decision making, (5) euthanasia experience and decisions and (6) thank you. A combination of open and closed questions was used in several formats. Question logic was applied to allow direction of participants to experience appropriate questions (purchase or euthanasia experience). The survey schedule was developed using Online Surveys (Jisc) and the full survey is available as Supporting Information Item 1.

# **Survey distribution**

The survey was disseminated via social media and equestrian email groups (n=198) found via equine specific websites, using a snowball sampling method (participants asked to share with other potential participants). The survey link was sent to Pony Club Area contacts and The British Riding Club groups, who had contact emails provided publically on websites, and they were asked to distribute within their networks. The survey was shared via 'The Nottingham Equine Colic Project' social media profiles on both Facebook and Twitter. The link was shared on a weekly basis while the survey was open for 4 weeks during July 2018 on both Facebook and Twitter.

# Data collection and analysis

The research was approved by The University of Nottingham's School of Veterinary Medicine and Science Ethics Committee and informed consent was collected from each participant. Data were collected, stored and organised into a Microsoft excel spreadsheet and stored in a password protected file. Descriptive analysis was performed on the data, which included mean, median and range for continuous data, and the percentage frequencies and mode for nominal data. Open text was analysed and grouped into relevant themes and areas.

# **RESULTS**

## **Demographics**

There were 495 completed responses, with over 90% of participants from the UK and Ireland (451/493). The completion rates for each section of the survey are provided in Supporting Information Item 2. Other respondents were from Europe, the United States and Australia but were excluded from the analysis. Most participants were female (97.0%, n = 438/450)

and had a median age of 45 years (range 18–70). Most frequently participants spent between 2 and 3 h each day with their horse (42.9%, n=196/451) and over 40% managed their horse on DIY at their own premises (n=188/448). Participants self-ranked their confidence in their ability to provide day-to-day management and care for a horse and had a mode response of 10 (45.5%, n=205/451) with 0 being lowest and 10 being highest. Advice was sought most frequently from the farrier (90.2%, n=405/449), followed by the vet (75.5%, n=339/449) and their trainer/coach (69.0%, n=310/449). The large majority of participants had purchased a horse before (97.6%, n=438/449).

## **Purchase decisions**

The median number of horses purchased by participants was four (range 1–200). The majority of participants were very confident in making decisions during several aspects of purchasing a horse (Figure 1), including deciding the type of horse to view (58.2%, n = 255/438) and trying the horse and deciding if it was suitable for them (51.1%, n = 223/436).

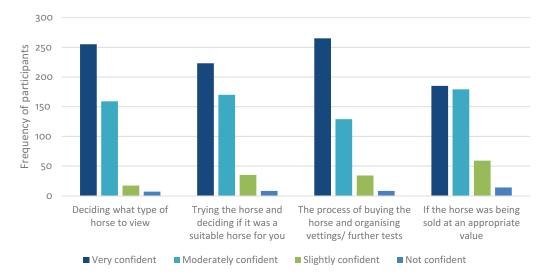
Participants most frequently did not seek any advice when deciding on the type of horse to view (n=169/437), or if the horse was being sold at an appropriate value (n=214/439). Advice from the vet was mostly sought for the process of buying the horse and organising the vetting/further tests (n=184/438). Friends/ family were the most frequent advice sought when trying the horse and deciding if it was suitable (n=186/435). Over 75% of participants had a plan for how long they were going to care for the horse they purchased (n=334/440), with 82.9% of these planning to care for the horse for its lifetime (n=277/334). Eighty-five percent of participants were happy and would purchase the horse again (n=370/436).

Participants were asked why they purchased their current horse and about its current function to compare their expectations with reality (Figure 2). The most frequent response was for leisure/hobby purposes for both questions (n = 258/440, n = 308/440), followed by companionship (n = 185/440, n = 303/440).

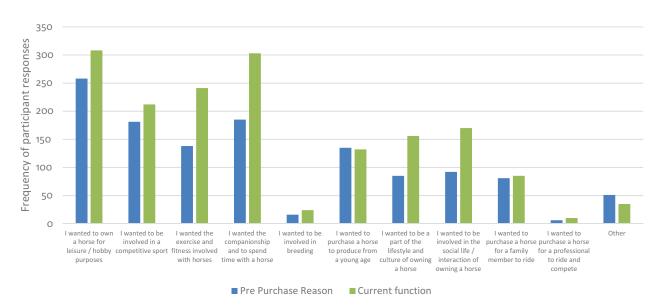
The horse's temperament when ridden (68.0%, n=299/440), temperament when handled (70.9%, n=312/440) and conformation (43.4%, n=191/440) were deemed very important requirements to the participants. Most participants deemed the knowledge of the previous owner (55.0%, n=242/440), the experience of the horse (41.8%, 184/440) and the breed/bloodlines of the horse (35.2%, n=155/440) as not important factors in their purchase decision-making.

When participants were asked about their main considerations at purchase, the most frequently mentioned factor was the ability of the horse to carry out its function (76.1%, n = 335/440), followed by financial commitments (63.9%, n = 281/440) and time commitments (53.6%, n = 236/440). When asked about

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**FIGURE 1** Confidence of horse owners on aspects of purchase decision-making from an online survey of horse owners exploring decision-making during key events of a horse's lifetime (n = 451)



**FIGURE 2** Reasons for the participants' most recent horse purchase compared to the function it currently provides from an online survey exploring decision-making during key events within a horse's lifetime (n = 440)

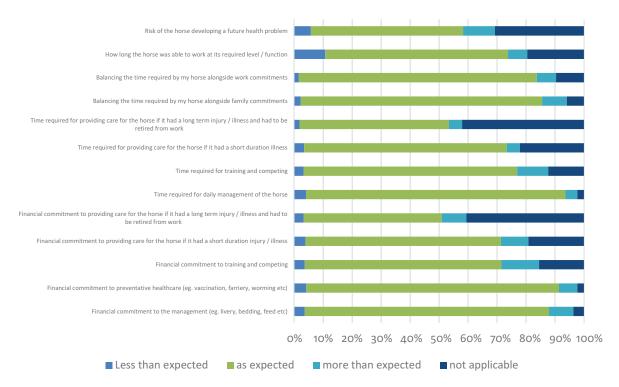
the reality of their commitments (the horse's welfare, personal time and financial) after purchasing a horse compared to their expectations prior to purchasing the horse, the most frequent response from participants was that the reality was as they had expected (Figure 3). The second most frequent answer was more than expected for their financial commitment (costs) of managing the horse (n = 37/440), costs of preventative healthcare (n = 28/440), and balancing the time required by the horse alongside family commitments (n = 37/435).

When asked about factors they considered important prior to the purchase of their horse, the majority of participants deemed personal safety (n = 228/439), whether the horse is happy and has a good quality of life (QOL) when working (n = 379/439), QOL when retired (n = 351/439) and their ability to care for the horse if there was a problem (n = 369/439) very impor-

tant (Figure 4). The majority also stated that 'what other people think about how you ride and compete your horse' (68.6%, n=301/439), 'what other people think about how you manage and care for your horse' (57.6%, n=253/439) and 'what other people think about your horse's health and welfare' (44.9%, n=197/439) were not important. However, 23.2% (n=102/439) thought that 'what other people think about your horse's health and welfare' was moderately important, and 37.1% (n=163/439) thought it was either moderately or very important (Figure 4).

# **Euthanasia decisions**

There were 409 out of 451 participants that had experienced euthanasia with one or more of their horses, with 375 being from the UK and Ireland. The median



**FIGURE 3** Frequency of responses of participants' commitments after purchasing their horse from an online survey exploring decision-making during key events within a horse's lifetime (*n* = 440)

number of horses the participants had euthanased was 2 (range 1-120) and the mode year when participants had most recently experienced euthanasia of a horse was 2016 (range 1985-2018). The mean age of the horse at the time of euthanasia was 19.4 years (range 1-46 years). The majority of participants described their most recent euthanasia decisions as 'humane destruction' (57.6%, n = 216/375) rather than 'elective euthanasia' (42.4%, n = 159/375). Injury or illness with a low chance of survival (55.2%, n = 201/364), poor QOL (42.6%, n = 155/364) and long-term injury (35.7%, n = 130/364) were the three most frequent issues the horse had at the time of euthanasia. Fifty-four percent (n = 198/364) of participants only reported one of these issues at the time of euthanasia, and 60.0% (n = 118/198) of these reported that the horse had an injury or illness which had a low chance of survival.

Very important factors that influenced the end of life decisions for the majority of participants were; if the horse's current QOL (95.7%, n=354/370) or future QOL (88.6%, n=327/369) were compromised. In contrast, all other factors were most frequently deemed not important by the participants (Figure 5). The majority of participants (87.5%, n=328/375) sought advice or guidance when making the end of life decision. The majority (93.1%, n=323/347) sought advice from a vet, followed by family members (24.8%, n=96/347), and friends/ other horse owners (24.5%, n=85/347).

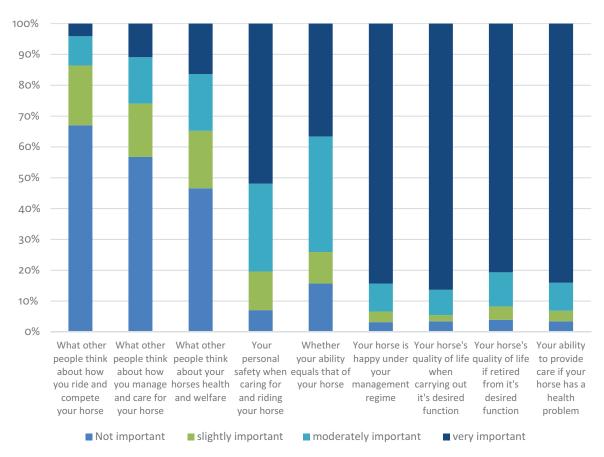
Figure 6 presents how participants ranked statements regarding their experience at the time of their horse's euthanasia. The majority of participants agreed or strongly agreed with nine of the statements,

including that they would make the same decision again (n = 365/373), their confidence in the euthanasia decision (n = 359/373) and that they felt a responsibility to be there during the euthanasia (n = 302/373). There was more variation in response to statements around feeling guilty (39.6%, n = 147/371 agreed or strongly agreed, and 44.2%, n = 164/372 disagreed or strongly agreed), grieving for the change in lifestyle, and feeling relief from the worry in caring. There were no major differences in responses by participants if it had been 6 months or longer since they had their horse put to sleep.

## **DISCUSSION**

The aim of this cross-sectional study was to explore horse owners' experiences of purchasing and euthanasia of horses, and the factors that may have influenced their decision-making process. Participants showed limited advice-seeking behaviour during their purchase decisions and the majority planned to care for their horses for the entirety of the horse's lifetime. The horse's temperament and conformation were deemed very important requirements for the horse they purchased, with breeding and horse experience unimportant to most participants. The ability of the horse to carry out its required function, owner safety and suitability matching were also deemed important considerations prior to purchase. Advice was sought by most when making euthanasia decisions, with the veterinary practitioner being identified as the most important source of advice. The majority of the participants' most recent euthanasia experiences were described

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**FIGURE 4** Horse owners' opinion of the importance of different factors affecting their horse purchase decision from an online survey exploring decision-making during key events within a horse's lifetime (*n* = 440)

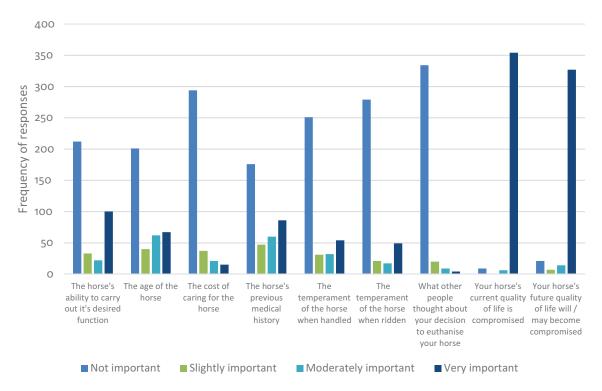
as 'humane destruction', where the horse's QOL and health problems were the key decision-making factors.

The use of an online survey and the sample population may be subject to bias. The total number of respondents was low compared to the number of UK horse owners/carers. The participant recruitment methods used (requirement to have experienced horse purchase and euthanasia) may have biased responses towards a more experienced and confident population. However, the impact of this in unclear the confidence of an owner to make decisions may not be congruent with their previous experience. The survey may also be subject to social desirability bias, where horse owners give a response that they think will be acceptable to others - their true decisions would have to be captured through prospective observational studies. Online surveys are considered to be efficient for time, cost and data management.<sup>3</sup> However, there are several limitations that should be considered when interpreting the findings of these studies. Response rates for online surveys have been found to be lower than postal surveys.<sup>4,5</sup> The distribution methods used for snowball sampling via social media and email meant that the calculation of response rates is unachievable. It was not possible to determine the number of people who saw the links to the surveys and chose to not participate.

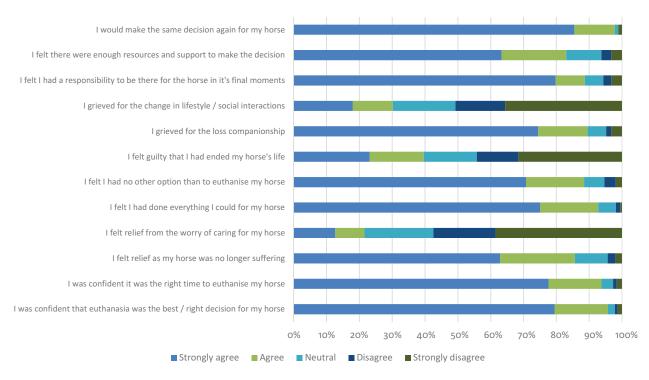
The study participants were confident in their ability to make purchase decisions and showed limited advice-seeking behaviour. The majority sought no

advice when making decisions on the type of horse to view and its appropriate value, and had a high level of confidence in deciding what type of horse to view to purchase, the suitability of the horse being tried and providing day-to-day management and care for their own and other horses. There are several potential contributing factors to the participants high self-rating of confidence. Participants may have believed that the question around their confidence was a reflection of how well they care for their horses, and the horses' welfare. The welfare of horses has been rated as very important by owners in a number of studies, <sup>7,8</sup> participants may perceive that they provide the best possible care and welfare for their horses and hence rate themselves highly. The survey distribution may have led to self-selection bias, with people with higher confidence being more willing to participate in the survey, or being active on the social media groups used to distribute the survey. Maximum confidence may also be a reflection of the personality types of those involved with horses, so further exploration into this is required.

The lack of advice seeking behaviour around purchase decisions may be a reflection of how personal these decisions are to owners, and how they rate their own opinion and experience. This lack of advice-seeking behaviour and reluctance to discuss finances could be an important barrier to developing or providing support and information regarding purchase decisions. Further studies are required to determine how advice can be provided in an appropriate format, for



**FIGURE** 5 Factors considered important by horse owners when making a euthanasia decision for their horse from an online survey exploring decision-making during key events within a horse's lifetime (n = 370)



**FIGURE 6** Participants responses to a 5-point Likert style questions to statements regarding their experiences at the time of euthanasia of their horse from an online survey exploring decision-making during key events within a horse's lifetime (*n* = 375)

example whether anonymised information through the Internet, or information through a trusted source, as a veterinary practitioner, would be more effective.

When asked about their purchase requirements, the temperament of the horse, both ridden and when handled, was considered among the most important requirements. This was similar to the findings of another study<sup>9</sup> when exploring the importance

of personality traits for both riders and breeders of horses using economic weighting. The assessment of the horse's temperament tends to be the responsibility of the horse owner as the pre-purchase assessment or vetting performed by a veterinarian primarily focuses on the physical capabilities of the horse, and not a temperament or behavioural assessment (although this may be noted and/or discussed by the vet).

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Problems with temperament and suitability were however noted in a previous qualitative study interviewing horse owners about their purchase decisions, so it is clear that this is not always straightforward. Industry guidance on how to assess the temperament of the horse, and what temperaments may be better suited to owners and riders of different experience and confidence levels could be beneficial in aiding purchase decisions.

The second part of the survey focused on euthanasia, collecting data on horse owners' experiences and decision-making. The mean age of the horse at the time of euthanasia was 19.4 years, with a broad range from 1 to 46 years. Previous studies have focused on the euthanasia of aged horses (over 15 years). 10-12 Preliminary findings by the Advancing Equine Scientific Excellence group prior to the development of the 'Just in Case' campaign, 13 however, reported a similar frequency of euthanasia with peaks seen for horses of 7-10 years and also 26-30 years. These findings along with the broad range of euthanasia ages in the current study highlight that planning for euthanasia decisions should not be delayed until the horse is older, as the decision may need to be made at any point during the lifetime of the horse. Only half of the respondents had a plan for when they may need to make a euthanasia decision for the horse. Of particular concern were those who did not have a plan or did not want to think about making a plan. This highlights a reluctance to consider or plan for these decisions, and may lead to delayed euthanasia decisions impacting the horse's welfare. Planning ahead should ensure that both emergency and elective decisions can be made in a timely manner. Notably, over 80% of participants planned to keep their horse for the entirety of its life, and a proportion of those were owners without a plan for when the end of life decision would need to be made

The lack of a plan and the emotional bond with a horse may impact the timeliness of euthanasia decisions. Participants selected that nearly 60% of their most recent euthanasias were 'humane destruction'. This was defined in the survey as 'the horse sustains an injury or manifests an illness or disease that is so severe as to warrant immediate destruction to relieve incurable and excessive pain and that no other options of treatment are available to that horse at that time, <sup>14</sup> which indicates a very high degree of suffering at the time of euthanasia. Frequently reported reasons for euthanasia within literature include old age, dangerous or undesirable temperament, acute or chronic injury or illness, or unwanted/abandoned horses. 11,15 The numbers of euthanasias that were described as 'humane' raises concerns over the welfare of these horses. Delayed death was identified as one of the four major welfare concerns currently facing the UK horse population, 16 where reluctance to make euthanasia decisions or lack of care for unwanted horses caused unnecessary suffering. In the current study, injury or illness with poor prognosis, long-term injury and poor prognosis were the most frequently reported

issues that the participant's horses had at the time of euthanasia. These were similar to the findings of other studies: one<sup>11</sup> described that hopeless prognosis and incurable disease were some of the most frequent reasons for euthanasia for the participants, and another<sup>12</sup> reported that hopeless prognosis was the most frequent factor associated with the decision to euthanise. More specific details of the euthanasia reasons, however, were not explored within this study, so it is unknown what proportion of the humane destructions were acute emergencies or chronic diseases, or whether this high proportion was a misunderstanding of what truly constitutes humane destruction. The description of humane destruction may also be used by owners to justify their decision, and indicate that they had no other choice. Poor QOL was identified as one of the main issues affecting the horse at the time of euthanasia (42.6%). Several studies of euthanasia in equids also identified QOL as an important factor. 17,18 It was therefore unsurprising that for over 90% of participants, compromise to the current or future QOL of their horse was a 'very important' factor that influenced their decision. This was a similar finding of another study, although their focus was specifically on euthanasia decisions for aged horses. 11 The findings from the current study highlighted the importance of QOL to horse owners, irrespective of their horse's age. The challenge arises, however, in how owners assess QOL, especially if they are not experienced, or have an extreme attachment, which affects their judgement. There is an urgent need for a simple and reliable measure of QOL to aid owners in their decision-making.

The majority of participants were however confident in their final decision - the majority 'agreed' or 'strongly agreed' they would make the same decision again, they did everything they could for the horse and they were confident that the decision was made at the right time for the horse. This suggests that participants did not regret the decision they made for their horses, and again reinforces the need for future research and resources on whether decisions are made at an appropriate time, and to support horse owners in judging when welfare is compromised enough to justify a decision. Research is needed to determine whether some of these euthanasia decisions were made too late with subsequent negative impacts on the horses' welfare, or whether the responses are a reflection of the responsibility grief participants may have felt when making or describing the decision.

There was marked variation in responses between participants with regard to the guilt felt, including the grief from the change to their lifestyle, and relief from worrying about the horse. This highlights the range of feelings and emotions that may be felt by different people and in different circumstances, which also agrees with the findings of previous euthanasia studies. <sup>11</sup> It highlights the conflicts that may occur both within and between different people around these decisions. It also highlights that different people may be impacted by the loss of their horse in different ways, and the need for tailored support.

In conclusion, findings from this exploratory study highlighted the high confidence many owners have when making decisions for their horses. Owners showed limited advice seeking behaviour in regard to horse suitability during their purchase decisions, but still deemed matching of their ability with the horse a very important purchase consideration. Tools or resources to help owners assess suitability may aid in purchase decisions, but it is important to understand the difficulty of helping those who do not actively seek advice. QOL of the horse was the major factor influencing euthanasia decisions, however a significant number of owners did not have a euthanasia plan, and many euthanasias were described as humane destructions. The horse-human relationship is likely to have a major impact on how and when horse owners make these decisions. Further work is needed to assess whether euthanasia decisions are timely, the impact on equine welfare across the horse population, and how veterinary practitioners and other professionals can best guide horse owners to start these decisions and conversations as early as possible.

## **ACKNOWLEDGEMENTS**

Harriet Clough's MRes studentship was funded by The Horse Trust. The authors would like to thank all the horse owners for their time and participation.

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## SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

**How to cite this article:** Clough H, Roshier M, England G, Burford J, Freeman S. Cross-sectional study of UK horse owner's purchase and euthanasia decision-making for their horse. *Vet Rec.* 2021;e56.

https://doi.org/10.1002/vetr.56