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Pilot Testing a Survey to Evaluate Horse Owner and Trainer Perceptions of the Importance and

Ideality of Equine Hoof Balance

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Abstract

Balance plays an integral role in the healthy equine hoof, yet there is a significant deficiency of research investigating horse owner and trainer knowledge of hoof balance. This study aimed to pilot test an online survey instrument evaluating horse owner and trainer perceptions of proper hoof care and balance. The survey instrument sought to collect demographic information of horse owners and trainers, determine horse owners' and trainers' abilities to identify ideally balanced equine forehooves, and assess horse owner and trainer knowledge of best hoof trimming and shoeing practices. Ninety-one horse owners and trainers with facilities that were within a 150-mile radius of the University of Arkansas, Fayetteville campus, were identified and subsequently contacted to participate in the study, nine of which fully completed the survey instrument over a two-week period. Survey results indicated that horse owners and trainers were able to correctly identify ideal forehoof balance when presented with a solar surface diagram; however, when presented with lateral diagrams of front hooves, respondents were less able to identify ideally balanced forehooves. Findings suggest that horse owners and trainers need education on best trimming and shoeing practices, including proper trimming intervals and when to trim the frog of the hoof. Because of the small sample size ($N=9$), the results of this study are not generalizable to the population. Future studies with larger sample sizes should seek to confirm these results and further identify hoof care and balance knowledge deficits.

Introduction

Background and Need

Balance is an essential quality of the functional, sound equine hoof. As Dr. Doug Butler, a premier farrier with a doctorate in veterinary anatomy and equine nutrition, wrote in the *American Farriers Journal*, “Feet that are kept balanced are seldom lame” (Turner, 2006, p. 9). While acknowledging that a bulk of literature reports digital cushion damage in the equine hoof is irreversible, Dr. Robert Bowker claimed that he has been able to improve dysfunctional, painful feet by giving horses the opportunity to heal through trimming for balance and an equal toe to heel ratio (Church, 2019). In fact, studies suggest that good farriery impacts soundness more than any other routine procedure performed on horses (O'Grady & Poupard, 2003). While farriers need to be concerned with many aspects of the equine foot, balance is promoted as a key factor for the functional hoof by many professional farriers and veterinarians. Dr. Scott Morrison, DVM, the head of the equine podiatry department at Rood & Riddle Equine Hospital, stated that for “a foot to remain healthy and accommodate [its] basic functions, it needs to maintain balance” (Morrison, 2008).

Though hoof balance is a complex topic, Kauffman & Cline (2018) discussed several relationships within the hoof commonly referred to by hoof care professionals to define proper hoof balance. Dorso-palmar balance relates the dorsal aspect of the hoof to the palmar aspect. A hoof with proper dorso-palmar balance should possess a dorsal wall that is closely parallel in angle and length to the palmar, or plantar, hoof wall. Medio-lateral balance relates the medial aspect of the hoof to the lateral aspect. When viewed dorsally, the medial and lateral hoof wall should match in height with an equal amount of hoof on each side. In his article discussing balance as a common cause of lameness in horses, Trotter (2004) claimed that medio-lateral

balance is commonly evaluated by hoof landing patterns; both the medial and lateral side of the hoof should hit the ground at the same time in a properly balanced hoof.

Not every horse is the same, nor is every hoof on a singular horse. Minor irregularities in balance are common, and horses can still perform at high levels successfully as long as the farrier's goal is "as-perfect balance as can be achieved" on that particular horse. Balance of both front and back feet of a horse is important, but it should be noted that the front and back feet of the horse, while similar, function differently from one another. While front feet are rounder, the back feet tend to be oval-shaped, or pointed at the toe (Kauffmann & Cline, 2018). Most of the studies reviewed in this paper focus on the balance of the horse's front feet. Horses bear 60% or more of their weight on their front legs (Cregier, 1982), and hence many leg problems are associated with lack of hoof balance in the front feet.

Balancing the equine hoof is a practice achieved successfully by many farriers using different methods. Turner (2006) discussed notable methods including geometric/dynamic, natural balance/four-point, and the Duckett's dot/diagonal methods. Both the geometric and dynamic methods focus on the hoof setting squarely and evenly on the ground, with the main difference between the two being whether the horse is at rest or moving. The natural-balance and four-point methods both use four symmetrical points around the hoof as the weight-bearing "pillars" of the hoof. It bears noting that the natural-balance method is based off of hoof shapes seen in feral horses living within the United States. These horses are often seen as hardy and relatively sound given the rough terrain they navigate. Additionally, two similar methods used to balance the hoof are the Duckett's dot and diagonal methods. Both methods utilize a center spot of the hoof and base the rest of the symmetry of the hoof around one central point. With the

multitude of methods available, different farriers use different methods depending on their training, preference, and the specific hooves they are trimming and shoeing.

Minute changes farriers make to hooves can impact the animal as a whole (Malone & Davies, 2011); therefore, a farrier can be essential to the overall health, maintenance, and performance of the horse. Correct physiological horseshoeing or trimming includes other factors in addition to balance, such as the “hoof-pastern axis, center of articulation, and heels extending to the base of the frog” (O’Grady, 2009, p. 218).

Despite the complex and delicate nature of farriery, the United States requires no certification in order to become a farrier. Indeed, without certification requirements, an uneducated layperson can legally trim and shoe horses. According to the American Farrier’s Association (AFA) (n.d.), the AFA offers three certification levels: Certified Farriers (CF), Certified Tradesman Farriers, and Certified Journeyman Farriers. There are certification levels within the AFA that go beyond these three, such as the Certified Journeyman Farrier with Therapeutic Endorsement (CJF TE). However, with no certification requirements in place, horse owners can easily make the mistake of choosing an incompetent farrier. If owners had a basic knowledge of best practices in trimming and shoeing, particularly concerning hoof balance, this could result in owners securing the services of a competent farrier to care for their horses.

Problem Statement

Little research has focused on what horse owners and trainers know about best practices of trimming and shoeing, particularly concerning ideal balance in the equine forehoof. While there are existing studies pertaining to the typical horseperson’s perception of various equine

topics, there are limited studies on the perceptions of horse owners and trainers concerning the complex topic of hoof balance.

Purpose Statement

The purpose of this study was to pilot test a survey instrument that collects demographic information of horse owners and trainers, determines horse owners' and trainers' abilities to identify ideal equine forehoof balance, and assesses horse owner and trainer knowledge of proper shoeing and trimming practices.

Research Objectives

The following objectives guided this study:

1. Collect the demographics of horse owners and trainers whose facilities are within a 150-mile radius of the University of Arkansas, Fayetteville campus.
2. Determine the abilities of horse owners and trainers within this area to identify ideal equine front hoof balance.
3. Assess knowledge of proper horse shoeing and trimming practices by horse owners and trainers within this area.
4. Pilot test a survey instrument that evaluates horse owners' and trainers' knowledge of hoof balance.

Literature Review

This section reviewed studies relevant to hoof balance, trimming and shoeing practices, and studies regarding horse owner and trainer perceptions of overall horse welfare. While there is a significant gap in research about horse owner and trainer perceptions of ideal hoof balance, there

are existing studies pertaining to hoof balance, trimming and shoeing practices, and horseperson perceptions of equine hoof- and health-related topics.

Hoof Balance as a Multivariable Concept

Hoof balance is a complex concept. While many studies have been conducted on this topic, each study investigated or reported on a different aspect of hoof balance. Some studies focused on breed-specific hoof balance issues (Herbrecht et al., 2020; Oosterlinck et al., 2016; Waldern et al., 2020). For example, Standardbred horses demonstrated flatter hoof-landing patterns than did warmblood horses examined in a previous study (Oosterlinck et al., 2016). Additionally, minor deviations in conformation of the 24 Standardbred horse test subjects did not necessarily affect the balance of their hooves (Oosterlinck et al., 2016). It was unclear whether deviation in ideal hoof balance in Icelandic competition horses and warmblood horses was caused by manipulation of the hoof or through conformational variance (Waldern et al., 2020), leading to the conclusion that the deviations in ideal hoof balance were more likely caused by conformational variance between the two breeds because both farriers used in the study followed the same shoeing standards. Herbrecht et al. (2020) went a step further than Oosterlinck et al. (2016) and Waldern et al. (2020), testing horses within a certain breed and discipline.

Disciplines are different segments within the equine industry in which horses are used for various athletic purposes; two examples are English dressage and Western cutting. While dressage requires horse and rider to work together to create specific movements demonstrating rhythm, suppleness, contact, impulsion, straightness, and collection (United States Dressage Federation, n.d.), cutting requires that a horse, with the help of its rider, perfects separating a cow from its herd (National Cutting Horse Association, n.d.). Certain disciplines call for specific

shoeing practices, as was the case in the Icelandic competition horses. Because of the complexity of hoof balance, more specificity may be needed in future studies.

Not only do breed and discipline play a role, but age, gender, conformation, and any history of lameness are potential additive factors to consider when examining hoof balance. Gorissen et al. (2018) looked at the development of hoof balance in 10 Dutch Warmblood foals in their first 24 weeks of life. Although foals do not perform high level maneuvers under saddle, it is beneficial to understand how hoof balance develops throughout the life stages of a horse to thoroughly understand the balance of a mature hoof. Gorissen et al. (2018) found that the foals had a higher variety of foot placement during dynamic movement than adult horses. In addition, the foals loaded more of their weight on the medial side of their hooves, rather than the lateral side that mature horses tended to favor. As the 10 foals in the study aged, their hoof balance normalized to what mature horses tended to exhibit. This study raised questions about how hoof balance affects weanlings, yearlings, and older immature horses starting training and what proper hoof balance looks like at each life stage.

Hoof balance can be examined through a variety of different lenses. Reilly (2010) studied hoof balance as the distribution of force throughout the solar hoof. Through two case studies, Reilly (2010) concluded that the gait of the horse, the type of shoes used, the activity of the horse, and the effect of the rider and their commands all impacted the balance of the hoof as measured by the distribution of force throughout the solar hoof. Tacchio et al. (2005) found that in untrimmed and unshod horses, it was possible that some aspects of hoof balance, specifically longitudinal balance, were impacted by the musculoskeletal system of the subject. Thus, the study concluded that hoof height partially accounted for heart rate, stride length, and stride frequency, while decreased toe length seemed to only benefit exercise capacity and efficiency for

horses with steeper dorsal cortex angles ($\geq 45^\circ$). The Tacchio et al. (2005) study indicated that lengthening of the stride and decreased stride frequency resulted in a lower blood lactate level, suggesting increased exercise capacity. This research suggests that not only do breed and discipline affect hoof balance, but so do musculoskeletal systems, activity, shoes used, and the horse's rider.

While factors such as age, breed, and discipline are relevant when discussing hoof balance, so are factors manipulated solely by humans. Leśniak et al. (2017) conducted a study on the effects of hoof balance after shoeing every four to six weeks. Leśniak et al.'s 2017 study concluded that the heel angle was decreased as the toe grew longer, the hoof pastern angle become more broken backward, increased lateral loading potentially led to increased lateral hoof wall length, and the lateral angle decreased throughout the four-to-six-week period. Overall, it is strongly indicated through each of these studies that more research is needed to fully understand the complex concept of hoof balance and how it affects horse soundness.

Hoof Balance and Lameness

As Turner (2006, p. 15) highlighted, “an unbalanced foot is the fruitful cause of nearly every form of lameness to which the foot is liable....” This sentiment has been reflected in the literature. Pezzanite et al. (2018) studied the relationship of hind hoof imbalance with hindlimb lameness, finding that horses with hindlimb lameness had a significantly higher prevalence of a negative or neutral plantar angle of the distal phalanx (PADP). A normal PADP would be within the range of $2\text{-}10^\circ$ according to the study. In addition to these findings, it seemed that horses with lameness localized in specific parts of the hind leg, such as the distal tarsal joints, also had a higher prevalence of neutral or negative PADPs.

Kane et al. (1999) concluded that while acute toe and heel angles were seen more frequently in the test subjects suffering from cannon bone condylar fracture (CDY) and suspensory apparatus failure (SAF), medio-lateral hoof balance and perfect symmetry seemed to occur more often in horses with CDY and SAF than those in the control group. It is widely recognized that hoof balance is very important for sound performance in many disciplines; however, further research is warranted as Kane et al. (1999) raised questions about medio-lateral balance in racehorse hooves. Overall, the impact of hoof balance on horses in any discipline needs additional research in order to gain a thorough understanding of its implications on soundness.

Proper Shoeing and Trimming Practices

An interval of four-to-six weeks between trimming or shoeing is widely accepted as a best practice for hoof care. Leśniak et al. (2017) found that a shoeing interval of four-to-six weeks helped prevent long-term injury risk in equines working in soft ground, supporting this best practice. Thomas (2006) wrote that a shod horse needs to be trimmed every four to ten weeks depending on the rate of hoof growth, while the trimming interval of a barefoot horse depends primarily on how fast the hooves wear. Horses in certain conditions such as soft pastures and stalls may need more regular trimming, while horses in ideal environments may not need to be trimmed on a regular basis. Ultimately, Thomas (2006) reported that the interval between trims depends on the individual horse's needs. In contrast, expert Dr. Bowker recommended that horses be trimmed every four weeks or less during the growing season, with trims never extending beyond six-to-eight weeks (Church, 2019).

The frog of the hoof is an essential organ functioning to absorb shock, provide traction, assist in expanding the heels, and pump blood throughout the hoof (Butler, 1992; O'Grady,

2009). While varying opinions of whether to trim the frog exist, many hoof care professionals claim that the frog of the foot should not be trimmed except to remove excess horny material. Dr. Stephen O’Grady, BVSc, MRCVS, reported that he does not remove “horny material from the solar surface of the foot” except to detach “loose or exfoliating horn present over the frog or the sole” (O’Grady, 2009, p. 224). Butler (1992) claimed that trimming the hoof is a balance of maintaining enough sole and frog material to protect the hoof from bruising while promoting self-cleaning and normal frog function. Butler (1992) noted that “for many healthy horses, this means no sole or frog will be trimmed” (pp. 15-16). Some farriers, like Steve Sermersheim, CJF TE and Associate of the Worshipful Company of Farriers, stated that the frog needs to be trimmed when in environments that promote problems like thrush (Thomas, 2020). In contrast, Dr. Bowker stated that trimming the frog causes loss of function (Church, 2019).

A 50:50 toe-to-heel ratio (THR) of the hoof is an important aspect of hoof balance. Dr. Bowker, as reported by Church (2019), defined the 50:50 THR as the dorsal half of the hoof being in front of a line drawn through the center of rotation (COR), or the short pastern bone, and the plantar (or palmar) half of the hoof being behind the COR. Bowker pointed to 60:40 and 70:30 THRs as leading causes of navicular disease and abnormal lengthening of the coffin bone. O’Grady & Poupard (2003, p. 338) affirmed Dr. Bowker’s claim, and established that “the [COR] bisects the middle of the foot” in an ideal hoof.

Perception-Based Studies

The researcher found no published studies examining the perception of horse owners and/or trainers on the importance of hoof balance; however, there were existing studies on perceptions from both horse owners and jockeys on equine welfare and different aspects of the hoof. Luna et al. (2017) found, upon questioning Chilean horse owners about their perceptions of

their horses' welfare, hoof abnormalities and skin lesions were the top two concerns. While the study did not detail hoof shape or balance, it is worthy to note that the hoof abnormalities reported may have been caused by hoof imbalances. Furthermore, Müller-Quirin et al. (2020) examined horse owner perceptions of lameness in comparison to objective lameness exams conducted by licensed veterinarians. While the study did not highlight the concept of hoof balance, findings indicated that lameness was rarely or poorly recognized by horse owners.

In contrast to the horse owner perception studies, Horan et al. (2021) studied jockey perceptions of shoe-ground surface interactions. Findings indicated that jockeys preferred the most well-known shoeing practices, including steel and aluminum shoes. With regard to hoof balance, alterations to hoof balance such as manipulated pressure distribution seemed to change jockey perception of lower leg stability. While this study used a small sample size and had a few built-in biases (Horan et al., 2021), it created a foundation for further research on jockey perception of hoof-surface interactions.

While there are existing studies pertaining to hoof balance and horse owner perceptions, there is a gap in the literature combining the two subjects. The studies on hoof balance indicated that balance is an essential physiological component of the hoof (Gorissen et al., 2018; Herbrecht et al., 2020; Kane et al., 1999; Leśniak et al., 2017; Oosterlinck et al., 2016; Pezzanite et al., 2018; Tacchio et al., 2005), and the studies on horse-owner perceptions indicated a shortfall in education and recognition of hoof balance (Horan et al, 2021; Luna et al., 2017; Müller-Quirin et al., 2020). As a result, this study sought to determine what information deficiencies exist about ideal hoof balance and its importance in the horse owning and training population of the region contained within a 150-mile radius from University of Arkansas, Fayetteville campus.

Methodology

The purpose of this study was to pilot test a survey instrument to collect the demographics of horse owners and trainers whose facilities are within a 150-mile radius of the University of Arkansas, Fayetteville campus, determine horse owners' and trainers' abilities to identify proper equine forehoof balance, and assess horse owner and trainer knowledge of proper horse shoeing and trimming practices. This research was accomplished by selecting an appropriate research design, addressing rigor to ensure validity and reliability of the instrument, as well as following best practices in data collection protocol.

Research Design

This study was conducted using an Institutional Review Board (IRB)-approved (protocol #2112375578, see Appendix A) quantitative researcher-developed survey to assess horse owners' and trainers' perceptions of equine hoof balance (Appendix B). Quantitative research is appropriate for assessing human perceptions because it can aid in numerically summing or averaging responses in order to analyze data for the study purpose (Ho, 2016). This research utilized a pilot study design to establish methodology that could be used in larger future studies. Pilot studies are small-scale studies meant to test research instruments and study design to implement in larger-scale studies for increased probability of success (van Teijlingen & Hundley, 2002). The online survey instrument included demographic, Likert scale, and dichotomous question types (Appendix B).

Dichotomous and Likert-type survey questions were appropriate for these circumstances because the aim was to gather quantitative data on the subjective knowledge and perceptions of horse owners and trainers located within 150 miles of the University of Arkansas, Fayetteville

campus (Glasow, 2005). As demonstrated in a 2021 study in which jockeys were the participants, a Likert-type survey-based approach collected results on perceptions of safe hoof-surface interactions and hoof balance parameters (Horan et al., 2021). Dai et al. (2021) successfully utilized a mixed question survey containing both Likert-type and dichotomous questions to obtain data from Italian horse owners about their equine transport methods and the ensuing equine problem behaviors and injuries. In addition, DuBois (2018) used both Likert-scale and dichotomous questions to effectively collect data on perceptions of equine welfare by Canadian horse owners.

Rigor

Potential threats to the rigor of this study were addressed. A sampling size of 100 horse owners and trainers was sought to decrease the occurrence of any sampling error. The instrument was distributed to three faculty at the Dale Bumpers College of Agricultural, Food, and Life Sciences at the University of Arkansas, Fayetteville campus and three expert panel members to evaluate for face and content validity. Any changes deemed appropriate by faculty and the expert panel were included in the final survey instrument, with changes reviewed and accepted by the IRB. The researcher did not rely on any *a priori* information from personal connections within the target population to avoid personal bias. Personal connections were defined as potential participants having any interaction with the researcher before the initial introductory e-mail was sent.

Instrumentation

A 21-question survey instrument was developed by the researcher with the help of equine hoof care professionals and faculty within the Dale Bumpers College of Agricultural, Food, and

Life Sciences at the University of Arkansas, Fayetteville campus (Appendix B). A preliminary question on the survey instrument asked respondents whether they were 18 years of age or older. Even though age requirements for participation were made clear, one under-age participant completed the survey. In consultation with Qualtrics support services, a mechanism was introduced to terminate access to the survey for those under 18 years of age. This mechanism was immediately implemented, thus ensuring all participants were 18 years of age or older. Consequently, if the respondent answered “no” to the question requesting their age, their access to the survey instrument was immediately terminated in accordance with IRB restrictions. To ensure participant consent, a second question asked the respondent to confirm their consent for their recorded answers, excluding identifiable personal information, to be used for research purposes.

Seven demographic questions were designed to determine the length of time the respondent had owned or trained horses, their gender identity and age range, whether the respondent was a horse owner, trainer, or both, the number of horses owned or trained, and the discipline in which they participated. A drop-down menu for each demographic question allowed respondents to choose the best answer. For the discipline-related question, respondents were asked to select the item that best described the discipline in which they participated. Answer choices for the discipline question were Western, English, both Western and English, or neither.

Five questions were asked to determine knowledge of proper horse shoeing and trimming practices. Respondents were asked two questions: how often horses in their care were trimmed or shod, and how often they thought horses should be trimmed or shod. A drop-down menu with weeks ranging from 4 to 10, with an additional answer choice for none of the above, was provided for these questions. One question posed concerned the respondents’ perceptions of the

importance of trimming and shoeing practices to hoof balance; the answers to this question were rated on a five-point Likert-scale (5=extremely important; 1=not at all important). Two dichotomous true-false questions asked respondents if the frog of the hoof should be trimmed often and if the toe-to-heel ratio (THR) of a hoof should be 50:50. Seven dichotomous true-false questions with hoof diagrams assessed the respondents' abilities to identify a balanced horse forehoof. The survey instrument included two diagrams of equine front hooves considered ideally balanced by experts, in addition to five diagrams of equine front hooves considered not ideally balanced by experts.

Expert Panel

After the survey instrument was created by the researcher, reviewed by faculty in the Animal Science Department at the University of Arkansas, and approved by the IRB, it was given to an expert panel for review. Although there is not a specific number of experts required to comprise an expert panel, Evans (2003, p. 32) stated that the number of experts required should be "large enough to ensure the amount of expertise to get effective results." According to Gove (1981), an expert is defined as an individual possessing knowledge in a given area. For this study, experts needed to be knowledgeable concerning the proper balance of equine forehooves. The expert panel consisted of one licensed veterinarian specializing in equine medicine, one AFA certified farrier, and one licensed veterinarian specializing in equine podiatry with an AFA farrier certification. The expert panel was asked to evaluate the instrument for face and content validity. Any changes deemed appropriate by the expert panel were included in the final survey instrument, with changes reviewed and accepted by the IRB.

The expert panel members, all of whom agreed to participate, were contacted within the first two weeks of July 2022. Upon collecting suggestions from the expert panel, the phrasing of

the seven questions asking respondents to identify balanced hooves based on diagrams was modified. The original verbiage of the questions was “The hoof pictured below is considered a balanced hoof.” The AFA certified farrier identified one of the diagrams intended to be unbalanced as balanced if it were a hind hoof. The phrasing of all diagram questions was altered for clarity: “The hoof pictured below is considered a balanced front hoof.”

The member of the expert panel specializing in equine podiatry defined hoof balance as primarily “the medial to lateral balance of the trim.” For the purpose of this survey instrument, a broader definition of hoof balance was used for respondents who were not hoof care professionals. The final IRB approved instrument (Appendix B) was created in Qualtrics, a professional platform used by the University of Arkansas to create and distribute online surveys.

Population and Sampling

The target population selected for this study was horse owners and/or horse trainers located within 150 miles of the University of Arkansas, Fayetteville campus with publicly accessible e-mail addresses and phone numbers. This study’s criteria for horse owners and/or trainers were:

- Obvious ownership or training of horses on Google listings and/or public websites
- Unidentified in previous keyword searches
- Location within 150-miles of the University of Arkansas, Fayetteville campus
- No prior personal connections with the researcher
- Publicly listed e-mail address and phone number

Those listings that did not meet the study criteria were excluded from the population.

The population was identified through convenience and snowball sampling. Convenience and snowball sampling were used in order to obtain a large sampling size. Convenience sampling is defined as the following:

...a type of nonprobability or nonrandom sampling where members of the target population that meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the purpose of the study (Etikan et al., 2016, p. 2).

Once the convenience sampling population was identified, potential participants were invited to refer other horse owners and trainers to participate in the survey. This is considered a nonprobability sampling method known as snowball sampling (Johnson, 2014).

Data Collection

Horse owners and trainers within a 150-mile radius of the University of Arkansas, Fayetteville campus with publicly accessible e-mail addresses and phone numbers were identified through convenience sampling via Google Internet searches. To identify horse owners and trainers, multiple keyword phrases were typed in the Google search engine. A total of 240 horse owners and trainers were identified. A full list of horse owners and trainers identified by keyword phrases can be found in Appendix C. The Google search engine provided 20 listings upon entering each keyword phrase; however, many listings did not meet the study criteria as horse owners and/or trainers. The keywords typed into Google search with the accompanying number of horse owners and/or trainers who were identified to participate in the study are below:

- Arkansas equine facilities (2)
- Arkansas horse ranches (4)

- Arkansas horse stables (1)
- Arkansas horse trainers (2)
- Bentonville Arkansas horse stables (3)
- Central Arkansas horse ranches (2)
- Central Arkansas horse stables (2)
- Central Arkansas horse trainers (2)
- Eastern Oklahoma equine facilities (4)
- Eastern Oklahoma horse barns (2)
- Eastern Oklahoma horse ranches (3)
- Eastern Oklahoma horse stables (8)
- Eastern Oklahoma horse trainers (11)
- Joplin Missouri equine facilities (1)
- Joplin Missouri horse stables (2)
- Joplin Missouri horse trainers (5)
- Northwest Arkansas horse barns (2)
- Northwest Arkansas horse stables (8)
- Northwest Arkansas horse trainers (5)
- Southern Missouri horse stables (2)
- Southern Missouri horse trainers (2)
- Tulsa Oklahoma horse ranches (2)
- Tulsa Oklahoma horse stables (7)
- Tulsa Oklahoma horse trainers (8)

A list of individual horse owners and trainers contacted can be found in Appendix D.

A total of 91 horse owners and trainers who met the pilot study criteria were identified. Contact with horse owners/trainers was established on October 5th, 2022, at 10:00 A.M. Central Time via an introductory e-mail containing the electronic Qualtrics survey instrument link and a statement specifying how participation could positively impact horse health (Appendix E). A

link to the Participant Consent Form was included in the initial e-mail sent to possible participants (Appendix F).

A follow-up e-mail was sent thanking those who completed the survey and inviting those who had not yet completed the survey to do so (Appendix G). This follow-up e-mail contained the electronic link to the Qualtrics survey and was sent on October 10th, 2022, at 10:00 A.M. Central Time, five days after the initial e-mail was sent as recommended by Kittleson (1997).

Both e-mails were composed and distributed through Qualtrics' e-mail distribution option and included IRB confirmation that the study was ethical and legal, estimated survey completion time, and a statement that respondents' aggregate feedback would be utilized in a published study. Contained in both the initial and follow-up e-mails was a request for the recipient to refer other horse owners and trainers within 150 miles of the University of Arkansas, Fayetteville campus by forwarding the survey invitation e-mail.

Upon survey completion, respondents were thanked and asked if they would like to be provided the results of the study once processed. Data from the survey instrument was collected and analyzed in Qualtrics.

Data Analysis

The data collected from this study was analyzed in the Qualtrics Stats IQ program. Descriptive statistics were generated for frequencies, means, and standard deviations from the collected data.

Results

The purpose of this study was to pilot test a survey instrument to collect demographic information of horse owners and trainers within a 150-mile radius of the University of Arkansas, Fayetteville campus, determine the abilities of horse owners and trainers to identify ideal equine forehoof balance, and assess horse owner and trainer knowledge of proper horse shoeing and trimming practices. According to Connelly (2008), a pilot study sample should be 10% of the sample of the study population. Nine horse owners and/or trainers (10% of the identified population) fully completed the survey and descriptive statistics for those respondents were reported. Four horse owners and/or trainers partially completed the survey, and one horse owner and/or trainer under the age of 18 completed the survey. These responses were not reported.

Research objective #1: Collect the demographics of horse owners and trainers whose facilities are within a 150-mile radius of the University of Arkansas, Fayetteville campus.

Seven demographic questions (3, 4, 5, 6, 7, 8, and 9) in the instrument (Appendix B) were designed to determine the length of time the respondent had owned or trained horses, respondent gender identity and age range, whether the respondent was a horse owner, trainer, or both, the number of horses owned or trained, and the discipline in which they participated.

All nine (100%) participants had more than 10 years of experience training and/or owning horses with seven (77.8%) identifying as female, one (11.1%) identifying as male, and one (11.1%) who preferred not to state their gender. The majority of participants were in the 55–64-year age range. Age ranges of participants can be seen in Table 1.

Table 1***Frequency and Percentage of Respondents' Age Range (N=9)***

Age Range	<i>f</i>	%
25-34	1	11.1%
35-44	2	22.2%
45-54	2	22.2%
55-64	3	33.3%
65-74	1	11.1%

All nine (100%) participants had owned more than 10 horses throughout their time in the horse industry. Eight (88.9%) participants had trained more than 10 horses throughout their time in the industry, and one (11.1%) had trained 1-5 horses. When asked about their participation in equine disciplines, the majority reported English. Disciplines practiced by survey participants can be seen in Table 2.

Table 2***Frequency and Percentage of Equine Disciplines Practiced by Respondents (N=9)***

Discipline	<i>f</i>	%
Western	2	22.2%
English	4	44.4%
Both Western and English	2	22.2%
Neither	1	11.1%

Research objective #2: Determine the abilities of horse owners and trainers, whose facilities are within a 150-mile radius of the University of Arkansas, Fayetteville campus, to identify ideal equine front hoof balance.

Seven dichotomous true-false questions with hoof diagrams assessed the respondents' abilities to identify a balanced horse forehoof. Five of these questions (15-19) included a picture of a lateral view of a balanced or unbalanced hoof. Two of these questions (20 and 21) included a diagram of a hoof from the solar surface perspective. Survey questions 15-21 can be found in Appendix B. The number of participants who responded correctly to dichotomous questions referencing diagrams (questions 15-21) can be seen in Table 3.

Table 3

Frequency and Percentage of Respondents' Abilities to Correctly Recognize Diagrams of an Ideally Balanced Front Hoof (N=9)

Question Number	<i>f</i>	%
15	4	44.4%
16	3	33.3%
17	8	88.9%
18	9	100%
19	6	66.7%
20	9	100%
21	9	100%

Question 16 asked respondents to assess a diagram of a balanced hoof from the lateral view. Only three (33.3%) of the participants correctly identified the diagrammed hoof as being balanced. Of the nine participants, 100% answered questions 20 and 21 correctly, identifying a balanced and unbalanced hoof from the solar surface perspective.

Research objective #3: Assess knowledge of proper horse shoeing and trimming practices by owners and trainers whose facilities are within a 150-mile radius of the University of Arkansas, Fayetteville campus.

Five questions (10, 11, 12, 13, and 14) were used to assess participant knowledge of proper shoeing and trimming practices. Question 10 asked participants how often their horses were trimmed or shod; four (44.4%) reported every six weeks, three (33.3%) reported every five weeks, one (11.1%) reported every seven weeks, and one (11.1%) reported every 10 weeks.

Question 11 asked participants how often they thought horses should be trimmed or shod. Five (55.6%) participants reported every six weeks, two (22.2%) reported every five weeks, one (11.1%) reported every 10 weeks, and one (11.1%) reported none of the above.

Question 12 asked participants how important trimming and shoeing horses is to hoof balance. All nine (100%) participants answered that shoeing and trimming is important to hoof balance, with seven (77.8%) answering extremely important, and two (22.2%) answering very important.

Question 13 asked if the frog of the hoof should be trimmed regularly. Six (66.7%) participants answered true, the frog of the hoof should be trimmed regularly, while three (33.3%) answered false.

Question 14 asked participants if the ideal THR of the hoof should be 50:50. Most participants, six (66.7%), correctly answered true, that the ideal THR was 50:50, while three (33.3%) answered incorrectly.

Research objective #4: Pilot test a survey instrument that evaluates horse owners' and trainers' knowledge of hoof balance.

The pilot survey was successfully launched on October 5th, 2022, at 10:00 A.M. Central Time. The survey remained open for 14 days. Access was terminated on October 18th, 2022, at 11:59 P.M Central Time.

Conclusions

The purpose of this research was to pilot test a survey instrument that collected demographic information of horse owners and trainers within a 150-mile radius of the University of Arkansas, Fayetteville campus, determined horse owners' and trainers' abilities to identify ideal equine front hoof balance, and assessed horse owner and trainer knowledge of proper horse shoeing and trimming practices. The study aimed to address the following four main objectives:

Research objective #1 conclusion: Collect the demographics of horse owners and trainers whose facilities are within a 150-mile radius of the University of Arkansas, Fayetteville campus.

The majority of participants in the surveyed population were female, between the ages of 35 and 64, participated in the English riding discipline, and considered themselves to be both horse owners and trainers who had owned and trained over 10 horses. Because of the small study size ($N=9$), the demographic results may not be representative of the general population of horse owners and trainers whose facilities are within a 150-mile radius of the University of Arkansas, Fayetteville campus.

Research objective #2 conclusion: Determine the abilities of horse owners and trainers, whose facilities are within a 150-mile radius of the University of Arkansas, Fayetteville campus, to identify ideal equine front hoof balance.

Seven survey questions sought to determine if participants could identify proper forehoof balance. Five questions contained lateral views of the hoof and short pastern, and two questions contained solar views of the hoof. Three questions, two of which contained a solar surface diagram, were answered correctly by 100% of respondents.

Responses to these questions may indicate that horse owners and trainers are better able to identify balance when looking at the solar surface of the hoof, in contrast to the lateral view of the hoof and pasterns. These findings suggest that horse owners and trainers need more education to correctly identify balanced dorsal/palmar angles of the hoof.

Research objective #3 conclusion: Assess knowledge of proper horse shoeing and trimming practices by owners and trainers whose facilities are within a 150-mile radius of the University of Arkansas, Fayetteville campus.

Survey questions 10-14 sought to determine knowledge of proper shoeing and trimming practices. When analyzing knowledge of proper hoof trimming practices, one expert, Dr. Bowker, recommended that horses be trimmed at least every four weeks, with trims never extending beyond six-to-eight weeks (Church, 2019). Leśniak et al. (2017) claimed that a shoeing interval of four-to-six weeks helps prevent injuries. Seven participants were in alignment with Leśniak et al.'s (2017) recommendations for shoeing intervals of working horses, but their responses did not align with Dr. Bowker's recommendations for trimming (Church, 2019). Although all participants reported that trimming and shoeing was important to equine hoof balance, the results of this study indicated a possible gap in what individuals believe and what they practice.

Question 13 asked participants if the frog of the hoof should be trimmed regularly. The majority of respondents, six, (66.7%) responded that the frog should be trimmed regularly. The literature varies on whether the frog should be regularly trimmed (Butler, 1992; Church, 2019; O'Grady, 2009), therefore no inference of knowledge or lack of knowledge of the proper trimming of the frog can be drawn from participant responses. It is important to note, however, that only two-thirds of respondents knew that the ideal THR of a horse's hoof should be 50:50 as specified by Church (2019) and O'Grady & Poupard (2003).

These findings indicate all surveyed horse owners and trainers recognize that hoof trimming and shoeing are important to hoof balance, but many need education on proper trimming and shoeing practices, specifically trimming intervals, proper frog trimming practices, and ideal toe-to-heel balance.

Research objective #4 conclusion: Pilot test a survey instrument that evaluates horse owner and trainer knowledge of hoof balance.

Although thoroughly reviewed by University of Arkansas Department of Animal Science faculty and an expert panel, it became clear after implementing the survey that certain changes should be made to further clarify the questions.

Recommendations

Nine surveys were fully completed by horse owners and trainers 18 years of age or older. A larger sample size is recommended for future studies to confirm the results of this study. While 240 horse owners and trainers within a 150-mile radius of the University of Arkansas, Fayetteville campus, were identified, only 91 of those were contacted to participate in the survey due to strict study criteria. Future studies could increase the number of potential participants identified and contacted by lessening study criteria, such as expanding the study's region and entering more keyword phrases in the Google search engine. Future studies could increase response rate by using a mixed mode method of contact, such as a phone call reminder, and incentivizing participation using funding resources.

Minor modifications to the survey instrument are recommended by the researcher due to the survey platform used in this study and respondent feedback. Future studies should consider adding a question asking participants where their facilities are located; this would ensure the participant is within the study region and provide additional data for the study. Additionally, a

question asking participants how they found out about the study could be useful in recruiting more participants. The data of this study do not indicate whether a respondent was identified by the researcher or referred by a participant.

One respondent indicated that Question 10, which asked how often the horse owner and/or trainer had the horses in their care trimmed or shod, did not allow them to accurately detail their hoof care regime. This question could be altered in a variety of ways to provide more answer choices. The researcher recommends constructing two different questions, one concerning the frequency of trims on barefoot horses and one concerning the shoeing interval on shod horses. An additional answer choice, such as “Varies due to other factors” with an open response option, may also enable the respondent to represent their hoof care regime more accurately. Future studies should include a larger quantity of questions pertaining to trimming and shoeing intervals to further identify knowledge deficits in those areas.

Question 13 stated that “The frog of the hoof should be trimmed regularly” with true and false answer options. The survey question was formulated based on expert Dr. Bowker’s statement that the frog of the hoof should never be trimmed (Church, 2019); however, the literature on this subject varies, with farriers like Steve Sermersheim stating that trimming the frog depends on the environment the horse is in (Thomas, 2020). Due to the conflicting information in the literature, rephrasing the question to “In general, the frog of the hoof should be trimmed regularly” may clarify the question for participants in future studies. An additional question, such as one asking participants whether healthy horses’ frogs should be trimmed regularly, could further identify knowledge deficits in proper trimming practices.

Due to the knowledge deficits identified by this study, the researcher recommends educational information be made available to horse owners and trainers. This information should

include recommended trimming and shoeing best practices and how to identify proper hoof balance from a lateral view. Future studies could provide the correct responses to the survey questions to the respondent upon completion, allowing the respondent to learn from the survey. Additionally, Agricultural Extension Tip Sheets, 4H and Horse Club Presentations, and infographics posted in veterinarian offices could all be utilized to distribute valuable information to horse owners and trainers.

Due to the small number of responses, this study's findings are not generalizable to the population; however, the results of this pilot test indicate future studies should be conducted. A larger study should seek to further explore the demographics of horse owners and trainers in the region as well as determine if any demographic information, or combination of, impacts knowledge of proper hoof care practices or ability to identify an ideal front hoof.

Limitations

Limitations of the study included the use of convenience and snowball sampling which resulted in a small number of responses ($N=9$). Convenience and snowball sampling may not represent the aggregate population due to selection error and therefore have an inherent bias. Strict study criteria limited the response rate. One-hundred-and-thirty-four horse owners and trainers identified with the keyword phrases were not contacted due to the study criteria, thus limiting the number of potential participants.

Another limitation of the study was the method of contact used. E-mails, while convenient for mass distribution of an online survey, do not always reach the intended recipient. For this survey, Qualtrics Distribution reported that seven initial contact e-mails were bounced, and six follow-up reminder e-mails were bounced. A "bounced" e-mail, according to the

Qualtrics website, is defined as “an error in delivery that prevents the email from reaching the recipient’s inbox” (Qualtrics, 2022). When sending an e-mail through Qualtrics Distribution, a link to opt out of future e-mail communication from the Qualtrics website is provided. One recipient of the initial e-mail opted out and did not receive a follow-up e-mail in this study which may have impacted response rate. Criteria of this study required horse owners and trainers to have both publicly available e-mail address and phone number, limiting the number of potential participants without utilizing the phone call reminder to increase response rate.

Survey response rate may have been affected by the format of the first question “I am 18 years of age or older” with answer choices yes or no. Due to the nature of the Qualtrics survey platform, any question that terminates the respondent’s access to the survey after a certain answer contains a page break and an arrow the respondent must select in order to continue to the rest of the survey. Only the first question of the survey could be viewed before clicking the arrow, and this may have induced potential participants to exit out of the survey. Additionally, no instructions to click the arrow to proceed were provided in the survey or in any e-mail contact. One respondent answered “Yes” to the first question without completing any further questions.

Limitations of the survey instrument must be addressed. Drawn diagrams, rather than photographs of real horse subjects, were utilized to ensure consistency between diagrams and to highlight balance. Although drawn diagrams simplified the survey for the user, the diagrams may not accurately reflect horse owner and trainer ability to identify ideally balanced equine hooves on physical horses.

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Appendix A

IRB Approval Letter



To: Kathi Jogan
From: Douglas J Adams, Chair
IRB Expedited Review
Date: 05/24/2022
Action: **Exemption Granted**
Action Date: 05/24/2022
Protocol #: 2112375578
Study Title: Pilot Testing a Survey to Evaluate Horse Owner and Trainer Perceptions of the Importance and Ideality of Equine Hoof Balance

The above-referenced protocol has been determined to be exempt.

If you wish to make any modifications in the approved protocol that may affect the level of risk to your participants, you must seek approval prior to implementing those changes. All modifications must provide sufficient detail to assess the impact of the change.

If you have any questions or need any assistance from the IRB, please contact the IRB Coordinator at 109 MLKG Building, 5-2208, or irb@uark.edu.

cc: Katherine DeVere Gilmore,
Investigator Lauren R
Thomas, Key Personnel

Appendix B

Survey Instrument

The purpose of this survey is to determine knowledge of hoof balance by horse owners and trainers who are 18 years of age or older and live within 150 miles of the University of Arkansas, Fayetteville campus. Results of this survey can help to determine information that could positively affect equine welfare decisions by horse owners and trainers. Participation is voluntary and any identifiable personal information will be kept confidential to the extent allowable by law. Thank you for your consideration in completing my survey.

Note: Correct answers are highlighted in this survey.

1. I am 18 years of age or older.

Yes

No

2. I consent to my recorded answers (excluding identifiable personal information) being used for research purposes.

Yes

No

3. How long have you owned and/or trained horses?

Less than 1 year

Between 1 and 5 years

Between 5 and 10 years

More than 10 years

4. What gender do you identify as?

Male

Female

Other

Prefer not to answer

5. What is your age?

18-24

25-34

35-44

45-54

55-64

65-74

75 or older

6. Are you a horse owner, horse trainer, or both?

Owner

Trainer

Both horse owner and horse trainer

Other: _____

7. How many horses have you owned throughout your time in the horse industry?

None

1-5

5-10

More than 10

8. How many horses have you trained throughout your time in the horse industry?

None

1-5

5-10

More than 10

9. Which equine discipline do you participate in?

Western

English

Both Western and English

Neither

10. Generally, how often are your horses' hooves trimmed or shod?

Every 4 weeks

Every 5 weeks

Every 6 weeks

Every 7 weeks

Every 8 weeks

Every 9 weeks

Every 10 weeks

None of the above

11. Generally, how often should a horse be trimmed or shod?

Every 4 weeks

Every 5 weeks

Every 6 weeks

Every 7 weeks

Every 8 weeks

Every 9 weeks

Every 10 weeks

None of the above

12. How important do you think trimming or shoeing horses is to hoof balance?

Extremely important

Very important

Moderately important

Slightly important

Not at all important

13. The frog of the hoof should be trimmed regularly.

True

False

14. The ideal toe-to-heel ratio should be 50:50.

True

False

15. The hoof pictured below is considered a balanced front hoof.

- True
False



16. The hoof pictured below is considered a balanced front hoof.

- True
False



17. The hoof pictured below is considered a balanced front hoof.

- True
False



18. The hoof pictured below is considered a balanced front hoof.

- True
False



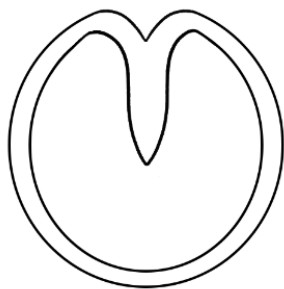
19. The hoof pictured below is considered a balanced front hoof.

- True
False



20. The hoof pictured below is considered a balanced front hoof.

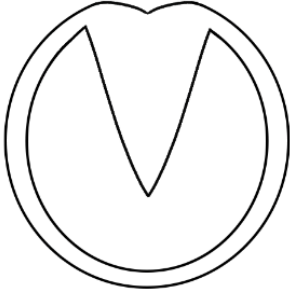
- True
False



21. The hoof pictured below is considered a balanced front hoof.

True

False



We thank you for your time spent taking this survey.

Your response has been recorded.

If you would like the results of this survey back, please e-mail me at kdgilmor@uark.edu

Appendix C

Google Search Results for Owners and Trainers

Note: Google search provided 20 listings for each keyword phrase

Keyword Phrase	No. Listings Identified as Horse Owners/Trainers	No. Horse Owners/Trainers Identified in Previous Searches	No. Listings Meeting Study Criteria
Arkansas equine facilities	20	14	2
Arkansas horse ranches	20	9	4
Arkansas horse stables	20	17	1
Arkansas horse trainers	20	17	2
Bentonville Arkansas horse stables	20	15	3
Central Arkansas horse ranches	19	12	2
Central Arkansas horse stables	19	10	2
Central Arkansas horse trainers	20	16	2
Eastern Oklahoma equine facilities	19	6	4
Eastern Oklahoma horse barns	20	16	2
Eastern Oklahoma horse ranches	20	9	3
Eastern Oklahoma horse stables	19	0	8
Eastern Oklahoma horse trainers	20	4	11
Joplin Missouri equine facilities	13	10	1
Joplin Missouri horse stables	19	3	2
Joplin Missouri horse trainers	18	11	7
Northwest Arkansas horse barns	20	18	2
Northwest Arkansas horse stables	20	0	8
Northwest Arkansas horse trainers	20	13	5
Southern Missouri horse stables	20	0	2
Southern Missouri horse trainers	20	2	2
Tulsa Oklahoma horse ranches	20	16	2
Tulsa Oklahoma horse stables	19	9	7
Tulsa Oklahoma horse trainers	18	9	7

Appendix D

Horse Owners and Trainers Contacted

- Arkansas equine facilities
 1. KC Equine, LLC
 2. Equestrian Zone
- Arkansas horse ranches
 1. Rockin' Z Ranch
 2. Horse -n- Bear Ranch
 3. Autumn Ridge Gypsy Vanner Horses
 4. Richard Hunt Ranch and Saddleshop
- Arkansas horse stables
 1. Heartland Equestrian
- Arkansas horse trainers
 1. Tinker Turner Performance Horses
 2. Standridge Circle S Ranch
- Bentonville Arkansas horse stables
 1. Equestrian Arts Foundation
 2. Zuriel Stables
 3. Laurel Manor Equestrian
- Central Arkansas horse ranches
 1. Rimrock Cove Ranch
 2. Raising Hope Ranch
- Central Arkansas horse stables
 1. Horseplay Racing Stables
 2. Barnyard Friends & Stables
- Central Arkansas horse trainers
 1. AG Horsemanship
 2. 3L Horsemanship
- Eastern Oklahoma equine facilities
 1. Osage Hills Equestrian Center
 2. Hogan Equine
 3. Grand Central Stables Polo & Country Club
 4. McKenzie Stables
- Eastern Oklahoma horse barns
 1. Sooner Stables
 2. Three Strand Ranch
- Eastern Oklahoma horse ranches
 1. Horse Heaven Ranch Resort
 2. Flying G Ranch
 3. Wood Guest Ranch

- Eastern Oklahoma horse stables
 1. SBH Stable
 2. Creek Trail Equine
 3. Sierra Ranch, LLC
 4. Coyote Ridge Stables & Equestrian Center
 5. Flying Change Farm
 6. Three Horse Farm
 7. Royal Horse Ranch
 8. Prairie Lane Farm
- Eastern Oklahoma horse trainers
 1. DeWeese Barrel Horses
 2. Lipps Horse Training
 3. Clint Ramsey Performance Horses
 4. Sean Johnson Performance Horses
 5. Woodridge Farm
 6. Marshall Performance Horses
 7. Vallejo III
 8. Davis Performance Horses
 9. RNR Farms
 10. Klakahross Icelandic Horse Facility
 11. To the Nines Elite Performance Horses
- Joplin Missouri equine facilities
 1. Delta Equine Center
- Joplin Missouri horse stables
 1. Xanadu Farms
 2. Dollar Creek Stables
- Joplin Missouri horse trainers
 1. GauxPro Performance Horses
 2. Grokett Performance Horses
 3. Bates Training Center
 4. Libby Ferguson Training Center
 5. IIB Farms
- Northwest Arkansas horse barns
 1. Señor Bonanza Caballerizas
 2. The Barn Riding Lessons
- Northwest Arkansas horse stables
 1. The Horse Park at Walnut Creek
 2. Always August Farm
 3. Flying Q
 4. Rogers Equestrian Center
 5. Little Sugar Creek Farm
 6. Deer Creek Farm
 7. Echo Valley Arabians
 8. Horses for Healing

- Northwest Arkansas horse trainers
 1. Marsha Wyatt Horsemanship
 2. University of Equestrian Arts
 3. Rico Enterprises
 4. Downunder Horsemanship Ranch
 5. Courage Therapeutic Riding Center
- Southern Missouri horse stables
 1. Green Valley Stables
 2. Huckleberry Stables
- Southern Missouri horse trainers
 1. BC Stables & Training Center
 2. Cheryl Childs Horsemanship & Training
- Tulsa Oklahoma horse ranches
 1. Tulsa Hills Youth Ranch
 2. Tulsa Trails West
- Tulsa Oklahoma horse stables
 1. Double U Ranch
 2. DMW Racing Stables
 3. RiverField Farm
 4. Heavenly Halo Horse Ranch
 5. Newberry Farm
 6. Saddle Time
 7. Firey Ranch Horse Boarding Services
- Tulsa Oklahoma horse trainers
 1. Eighteen Acres Farm
 2. SaddleBack Equestrian
 3. The Stables at Ironhorse
 4. KB Horsemanship
 5. Harrison Performance Horses
 6. River Run Farm
 7. KJM Equestrian
 8. Justin Austin Cutting Horses

Appendix E

Initial E-Mail Sent to Potential Participants

Subject: Equine Hoof Balance Survey

Greetings,

My name is Katie Gilmore, and I am a pre-vet honors student at the University of Arkansas. I am passionate about horses and am conducting a study on horse owner and trainer perceptions of hoof balance for my honors thesis research. Information from this study can be used to impact horse health. You were identified as an individual who is involved in the horse industry and have been selected to participate in an online survey. This survey takes about five minutes to complete and has been reviewed and approved by the University of Arkansas Institutional Review Board for ethicality and legality (IRB #2112375578). Participants must be eighteen years of age or older, and the survey should be completed within two weeks. Participation is completely voluntary, and you can skip any question or exit the survey at any time. All personal information will be omitted from reported results. You can click [this link](#) [Participant Consent Form] to the participant consent document if you would like more information about this study.

Please forward this e-mail to clients or other horse owners or trainers that are located within 150 miles of the University of Arkansas, Fayetteville campus. If you have any questions or concerns, please contact me at kdgilmor@uark.edu or 925-719-0271.

Follow this link to the Survey:

[Take the Survey](#) [Survey Link]

Or copy and the paste the URL below into your internet browser:

https://uark.qualtrics.com/jfe/preview/previewId/f68df40f-8eb9-43dd-9c04-59dbc522cb79/SV_9mpSbAKccQFhwSq?Q_CHL=preview

Thank you,

Katie Gilmore
Senior Honors Student
Department of Animal Science
University of Arkansas

Follow the link to opt out of future emails:

[Click here to unsubscribe](#) [Hyperlink to unsubscribe on Qualtrics website].

Appendix F

Participant Consent Form

Participant Consent Agreement

Study Title: Pilot Testing a Survey to Evaluate Horse Owner and Trainer Perceptions of the Importance and Ideality of Equine Hoof Balance

Please read this consent agreement carefully before you decide to participate in this research.

Purpose of the research study: The purpose of this survey is to assess horse owners' and trainers' perceptions of an ideal horse hoof, the importance of hoof balance, and its impact on hoof care. I am specifically seeking individuals who are 18 years of age or older and whose facilities are within a 150-mile radius of the University of Arkansas, Fayetteville campus.

What you will do in the study: Participants will complete an online 21-question survey exploring their views on the importance of hoof balance, their preferred hoof care regimen, and their ability to identify a balanced hoof. Participants can skip any question or stop the survey at any time.

Time required: The survey should take about 5 minutes to complete.

Risks & Benefits: There are no anticipated risks in this study. There are no direct benefits to you for participating in this study.

Confidentiality: All data collected will be kept anonymous to the fullest extent possible, and no personally identifiable information will be collected.

Voluntary participation: Completion of this survey indicates your implied consent to participate in this study. You have the right to discontinue participation in this study at any time by exiting the survey. Refusing participation will not adversely affect the participant's relationship with the University of Arkansas or the researchers.

Questions: If you have questions or concerns about your rights as a research participant, please contact Ro Windwalker, the University's IRB Coordinator, at 479-575-2208 or irb@uark.edu. If you have any questions about the survey or would like to know the final aggregate results of this survey, please contact me Katie Gilmore or Dr. Kathi Jogan by e-mail or phone.

Katie Gilmore
Senior Honors Student
kdgilmor@uark.edu
925-719-0271

Kathi Jogan
Honors Research Mentor
kjogan@uark.edu
479-575-6300

Agreement and Consent: By completing and submitting this survey, I am consenting for my responses to be used in this research.

Appendix G

Follow-Up E-Mail Sent to Potential Participants

Subject: Equine Hoof Balance Survey Follow-up

Good morning,

My name is Katie Gilmore, and I am a pre-vet honors student at the University of Arkansas. A few days ago, you received an e-mail and were asked to participate in a survey I am conducting about horse owner and trainer perceptions of equine hoof balance. Information from this study can be used to impact how owners and trainers in our region take care of their horses. If you have completed the survey, thank you very much for your time! If not, I would appreciate your consideration in completing this five-minute survey which has been approved by the University of Arkansas Institutional Review Board (IRB #2112375578). Participation is completely voluntary, and you can skip any question or exit the survey at any time.

Again, please forward this e-mail to clients or other horse owners or trainers that are located within 150 miles of the University of Arkansas, Fayetteville campus. If you have any questions or concerns, please contact me at kdgilmor@uark.edu or 925-719-0271.

Follow this link to the Survey:

[Take the Survey](#) [Survey Link]

Or copy and the paste the URL below into your internet browser:

https://uark.qualtrics.com/jfe/preview/previewId/f68df40f-8eb9-43dd-9c04-59dbc522cb79/SV_9mpSbAKccQFhwSq?Q_CHL=preview

Thank you for your time,

Katie Gilmore
Senior Honors Student
Department of Animal Science
University of Arkansas

Follow the link to opt out of future emails:

[Click here to unsubscribe](#) [Hyperlink to unsubscribe on Qualtrics website].