2022 SCIENCELINE

Online Journal of Animal and Feed Research

Volume 12, Issue 5: 261-265; September 30, 2022

ISSN 2228-7701

DOI: https://dx.doi.org/10.51227/ojafr.2022.35

CURRENT ATTITUDES AND SELF-RATED ABILITIES TOWARD PAIN ASSESSMENT OF HORSE OWNERS IN BOSNIA AND HERZEGOVINA

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Supporting Information

SHORT COMMUNICATION

PII: S2287701220035-12

Received: August 02, 2022

Revised: August 30, 2022

Accepted: September 21, 2022

ABSTRACT: Over the past decades, recognised importance of prompt and valid pain recognition and quantification in veterinary medicine significantly increased interest in investigating attitudes and self-rated abilities of veterinarians towards pain assessment. However, giving that the owners are the ones who decide when to call the veterinarian, it is also essential to investigate their attitudes and knowledge regarding pain recognition and management. This is the first research investigating horse owners' attitudes and self-rated abilities towards pain assessment and management in Bosnia and Herzegovina. The participants were invited via email or social media with attached link to online questionnaire created using the Google Forms platform. Surveyed population included adult sport or pleasure horse owners, and horse caretakers in Bosnia and Herzegovina. Study response rate was 33.33% (40 respondents). The questionnaire consisted of sections asking about respondents' demographic data, general pain assessment and management, and attitudes towards pain assessment done by veterinarians compared with theirs. Study respondents considered their abilities for pain recognition and quantification as sufficient and sufficient/moderate, even though most of them were unfamiliar with pain scales, and only negligible number use them. This study indicates the need and importance of owners' education concerning pain recognition and quantification in horses, and their more effective communication with veterinarians.

Keywords: Horse, Pain recognition, Pain quantification, Pain scales, Questionnaire.

INTRODUCTION

Accurate recognition of painful conditions in animals is crucial in treatment decisions (De Grauw and van Loon, 2016). In some animals, pain detection can be challenging as they are non-verbal (Fureix et al., 2010; De Grauw and van Loon, 2016). Reporting of the pain, same as the diseases, by owners is affected by their understanding and recognition of clinical signs. The owner's responsibility is to recognize the disease promptly and to find professional help providing a comprehensive animal history (Ireland et al., 2012). Some conclusions of previous studies point out that owners of geriatric horses recognize clinical signs but misinterpret them as normal or fail to link them to the disease (McGowan et al., 2010; Ireland et al., 2012). These omissions delay the veterinary treatment (Ireland et al., 2012). Earlier and more accurate recognition of the disease will lead to a better outcome for the horse (Scantlebury et al., 2014). In a study of Bowden et al. (2020), even though owners showed interest for health assessment of their horses and were self-confident doing it, those assessments could not always be considered as reliable because of their insufficient knowledge. The above emphasise importance of adequate owners' education and timely communication with veterinarians. There is one study investigating owners' attitudes toward pain recognition in bovine (Tschoner et al., 2021), and to the best of our knowledge one study regarding owners' pain recognition in horses in which owners and veterinarians pain assessments differed significantly (Sellon et al., 2022).

This study aims to identify and evaluate attitudes towards pain by horse owners and caretakers in Bosnia and Herzegovina, and to assess the need for educational programs establishment for equestrian staff to improve welfare and horses' quality of life.

MATERIALS AND METHODS

Study participants were invited to participate via email or social media (Facebook, websites dedicated to horse enthusiasts). The questionnaire was created as an online survey using the Google Forms platform, and its completion was voluntary and anonymous. The study population included adult sport or pleasure horse owners and horse caretakers in Bosnia and Herzegovina. Questions were based on previously published studies (Capner et al., 1999; Lascelles et al., 1999; Raekallio et al., 2003; Hugonnard et al., 2004; Williams et al., 2005; Lorena et al., 2013; Beswick et al., 2016). The four-sectioned questionnaire included questions to assess horse owners' attitudes towards pain and pain management in

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their horses. The questionnaire's first section consisted of questions about respondents' demographic data. The second section contained questions about general pain assessment, the ability of the respondents to detect and quantify pain, assessment methods, and factors influencing their assessment. The ability to detect and quantify pain was classified as excellent, sufficient, moderate, and insufficient, cannot assess, and never assess pain. Questions about the use of behavioural and physiological parameters for pain assessment, as well as knowledge of different pain assessment tables and their use were contained in the third section of the questionnaire. The fourth part consisted of questions related to pain management and attitudes of the respondents towards pain assessment done by veterinarians compared with theirs. At the end of the questionnaire, horse owners and caretakers had the opportunity to leave their comments, opinions, and recommendations related to this topic.

Ethical regulation

The study was approved by the Ethics committee of the Veterinary Faculty University of Sarajevo under approval number 01-02-18-5/20.

RESULTS

The total number of completed questionnaires in this study was 40 (33.33%) out of total of 120. Most study respondents, a total of 29 (72.00%), were under 30 years of age, while the remaining respondents, a total of 11 (28.00%), were younger than 50 years. Considering gender of the respondents, 22 (55.00%) were men and 18 (45.00%) were women. That pain was difficult to assess is considered by 25 (62.50%) of the respondents. Almost all respondents, 38 (95.00%) assess pain in horses. Respondent's self-rated abilities for pain detection and quantification are presented in Figure 1.

Almost all respondents who are assessing pain, 27 (71.05%), are not familiar with the scales for pain assessment in horses. Pain assessment scales were used by 3 (7.89%) study respondents. All study respondents agreed that knowing the animal's typical behaviour facilitates pain assessment. The intensity of manifested symptoms is considered to be primarily under the influence of individual sensitivity, 28 (70.00%) of the respondents, animal species 15 (37.50%), previous pain experience and environment 13 (32.50%), and animal breed 7 (17.50%). The behaviours based on which participants assess horse pain are shown in Table 1. That they could reliably estimate heart rate is considered by 26 (65.00%) of the study respondents, respiratory rate 32 (80.00%), digestive sounds 28 (70.00%), and rectal temperature 29 (72.50%).

Physiological parameters as indicators of pain were used by 24 (63.15%) of the study respondents. That owner can reliably assess and interpret behaviours caused by pain is considered by 26 (65.00%) of the study respondents, while 23 (57.50%) consider that owners can better notice the presence of pain in their animals than a veterinarian. The majority of respondents, 37 (92.50%), believe that analgesia is a significant benefit of pain management. Although 34 (85.00%) participants believe that the animal's recovery will be better if analgesia is present, 32 (80.00%) still consider that a certain degree of pain is beneficial because it reduces animal activity during a painful condition. If they notice pain in their animal, 22 (55.00%) study respondents will insist on the use of analgesics.

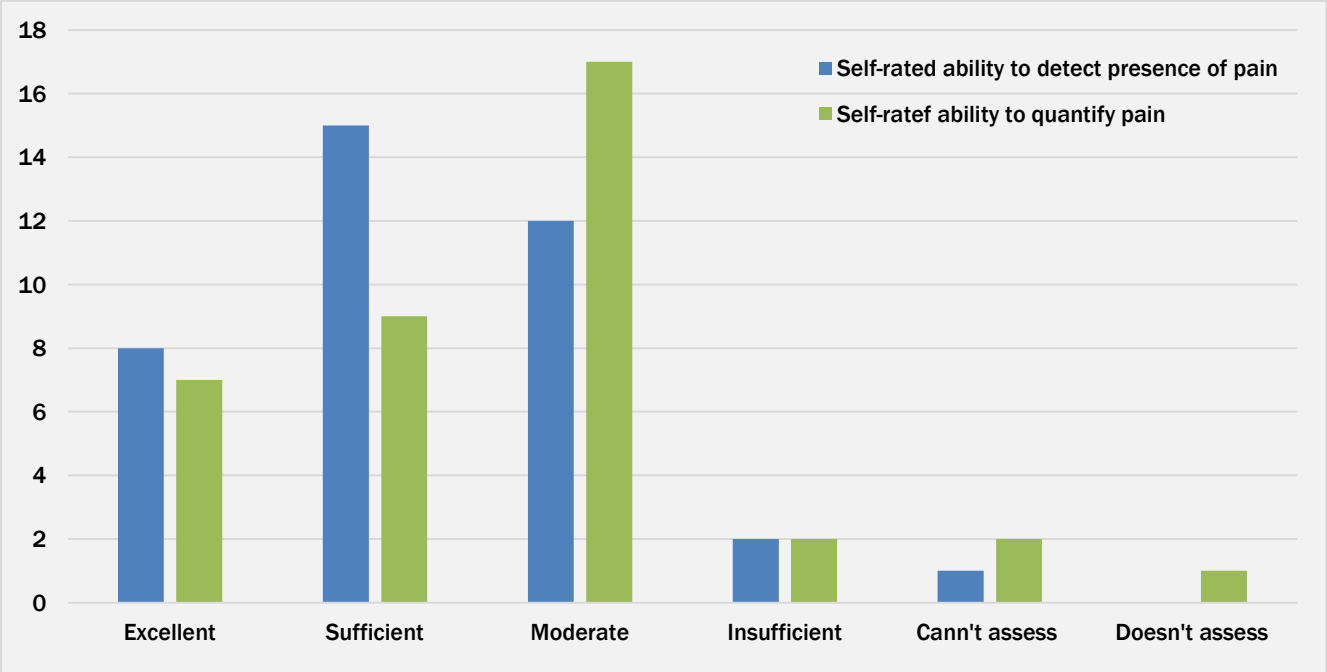

Figure 1 - Respondents' self-rated ability to detect presence of pain and its quantification in numerical analysis (numbers)

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Table 1 - Ranking of behavioural pain indicators in horses used by respondents

Behavioural pain indicators	Number citing (%)
Facial expresions	32 (84.21)
Demeanour	30 (84.21)
Response to palpation of painful area	28 (73.68)
Appetite	28 (73.68)
Sweating	22 (57.89)
Posture (weight distribution, comfort)	20 (52.63)
Rolling	19 (50.00)
Head movements	18 (47.36)
Kicking in the abdomen	18 (47.36)
Collapse	17 (44.73)
Interactive behaviour (reaction to observer(s))	17 (44.73)
Interactive behaviour (aggression towards handlers)	16 (42.10)
Pawing	16 (42.10)
Interactive behaviour (aggression towards foal and other horses)	13 (34.21)
Tail flicking (excluding flicking to chase off insects)	11 (28.94)
Tooth grinding	11 (28.94)
Tears	10 (26.31)
Interactive behaviour (reaction to sound stimulus)	10 (26.31)
Vocalization	9 (23.68)
Stretching	7 (18.42)
Lateral recumbence	4 (10.52)
Stupor	4 (10.52)

DISCUSSION

This is the first report from Bosnia and Herzegovina (B&H) regarding owners' attitudes toward pain in domestic animals. The main goal was to investigate the attitudes of horse owners toward pain recognition, its assessment, and management. There is no official horse owner's database in B&H. Therefore, respondents were identified and reached in various ways, which included veterinarians, horse shows and competitions, and horse breeders. According to the official data of the Agency for Statistics of B&H, in 2019 the number of horses was 14,000. The number of horses in 2019 decreased by 5% compared to the previous year, although there is an increase in the number of sports and recreational horses according to the authors' knowledge.

Considering previous similar survey studies (Price et al., 2002; Williams et al., 2005; Tomsič et al., 2021) lower response rates are not unusual. However, it doesn't mean that results of studies with low response rate are not representative (Stang and Jöckel, 2004; Hotchkiss et al., 2007). Most study respondents assess pain, and find it difficult to assess, but were self-confident about their abilities for pain recognition and quantification. Similar results were in a study examining the attitudes of veterinarians in B&H towards pain recognition and quantification, were most of the respondents considered their knowledge as sufficient in pain recognition and sufficient and moderate for pain quantification (unpublished authors data). Similar findings were reported from studies conducted in New Zealand (Williams et al., 2005), Ontario (Beswick et al., 2016), and in Colombia (Morales-Vallecilla et al., 2019). French (Hugonnard et al., 2004) and Swiss (Perret-Gentil et al., 2014) veterinarians considered their abilities as inadequate for pain quantification. Most study respondents are not familiar with pain assessment scales, as well as veterinarians in BiH (unpublished authors data).

The situation is similar with veterinarians in France (Hugonnard et al., 2004) and Queensland (Weber et al., 2012). Although it has been proven that pain assessment scales increase the ability of observers to recognize and quantify pain in animals (Morales-Vallecilla et al., 2019). Possible explanation for this could be the lack of available literature about pain recognition, assessment and pain scales on Bosnian language. Veterinarians in Colombia who participated in continuous training programs were more likely to use pain scales (Morales-Vallecilla et al., 2019), which indicates the need and benefit of such programs, attended by not only the veterinarians, but also animal owners because since they will decide when to seek professional help for their animal. If they notice pain in their animals, more than half of the respondents, will insist on the use of analgesics, emphasizing the importance of adequate and timely pain recognition and quantification done by owners. In a study of Tschoner et al. (2021), farmers and veterinarians estimated pain intensity similarly, but recognized pain differently and disagreed in opinions regarding analgesics use. Therefore, to ensure adequate pain management communication between both groups should be improved (Tschoner et al., 2021). All respondents believed that pain assessment is facilitated by knowing animal typical behavior, as well as veterinarians in B&H (unpublished authors data), and accordingly, most of them agreed that individual sensitivity has the greatest impact on its manifestation. The majority of owners felt that they could notice pain in their animals better than the veterinarian

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and that their pain assessment is reliable, contrary to the opinon of veterinarians in B&H (unpublished authors data). Similary as veterinarians in Finland (Raekallio et al., 2003), even though it is believed that animal owners and keepers can recognize behavioral changes that would otherwise go unnoticed, but don't necessarily interpret them as pain indicators. The study of Bornmann et al. (2021) indicate that some equestrians have too much self-confidence in interpreting affective states of horses, i.e. some participants incorrectly assessed behaviors that potentially indicate negative emotions, such as pain or distress, as indicators of happiness. This misperception can jeopardize the well-being of the horse as well as the rider's safety (Bornmann et al., 2021). Even with previous experience with the disease, most owners failed to recognize its signs (Scantlebury et al., 2014).

Facial expressions were the most commonly used pain indicator by respondents. In addition to facial expressions, respondents relied on demeanor, response to the touch of the painful area, and appetite for pain assessment. For comparison, veterinarians in B&H listed demeanour as the most useful behaviour when assessing pain (unpublished authors data). Only one-fifth of the respondents in this study considered vocalization as an indicator of pain, while it was considered as an important indicator of pain by BiH veterinarians (unpublished authors data), similar to the opinions of veterinarians in Ontario (Beswick et al. 2016), and in contrast to French (Hugonnard et al., 2004) veterinarians. In a study conducted by Tschoner and co-workers veterinarians used parameters such as bruxism, vocalization (moaning), and increased respiratory rate, which may be less obvious signs of pain for farmers, who relied more on parameters such as reduced food intake, weight loss, and fever (Tschoner et al., 2021). Most of the respondents in this study considered that they can assess heart rate and respiration, digestive sounds, and measure body temperature, which they also use to assess pain. Similar results were recorded in study by Bowden et al. (2020), but the results showed that their assessment of these parameters and knowledge about their normal values was not always correct. Almost all respondents in this study considered that animals have benefits of pain relief, as well as that the recovery is better if they received analgesics. Curiously, simultaneously the majority of respondents considered that a certain degree of pain is useful because it reduces animals' activity during painful conditions or after surgery. This observation is comparable to the opinions of veterinarians in B&H, the UK, New Zealand, and Finland (Capner et al., 1999; Raekallio et al., 2003; Williams et al., 2005). In a study conducted in Denmark, farmers considered most diseases to be more painful than veterinarians, but were less likely to use analgesics (Thomsen et al., 2012).

Most farmers in Bavaria were concerned about possible side effects of analgesics after their application to livestock, and this opinion can be the reason for farmers 'attitudes to administer fewer analgesics to livestock during and after procedures, compared to veterinarians (Tschoner et al., 2021). The use of other pain-relieving methods, apart from analgesics, is still not present enough in BiH. In this study, owners considered that their knowledge about pain recognition and quantification, on a scale from 1 to 5, is moderate (graded as 3 and 4).

CONCLUSION

This is the first report regarding attitudes of B&H horse owners toward. Horse owners have shown interest for pain assessment and its management, and its impact on horse's welfare. Study respondents used the most facial expressions, demeanour, response to the touch of the painful area, and appetite for pain assessment. Pain scales, similar to veterinarians in BiH, were used by only negligible small number of respondents. Previous reports, as well as this, emphasize the importance and need for additional education tailored to horse owners on the importance of timely and accurate pain recognition and its management, its impact on the animal welfare, as well as its potential effect on the safety of people working with those animals.

DECLARATIONS

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Authors' contribution

All authors contributed equally to this work.

Conflict of interests

The authors have not declared any conflict of interests.

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