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Efficacy of a standardized training on horse welfare indicators: a preliminary study.

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Harmonized data collection is essential to obtain a reliable picture of equine welfare conditions. Effective education on how to assess and score welfare indicators plays a critical role in terms of inter-observer reliability. The Horse Grimace Scale (HGS), a facial-expression-based pain coding system, is able to identify a range of acute pain conditions in horses (Dalla Costa et al., 2014, 2016; Lecchi et al.,2018). This study aimed at evaluating the efficacy of a standardized training on HGS inter-observer reliability.

Students in Veterinary Medicine from the University of Milan (N=46, second year course) and the University of Teramo (N=31, fourth year course) were recruited. Prior to any training, students were asked to score 10 pictures of horse faces using the six Facial Action Units (FAUs) of the HGS: Stiffly backwards ears, Orbital tightening, Tension above the eye area, Prominent strained chewing muscles, Mouth strained, Strained nostrils. Then, a 30-min training session was provided, including detailed descriptions and example pictures of each FAU, as well as a discussion of five pictures previously scored by an experienced assessor. After training, students scored other 10 pictures. To determine the inter-observer reliability pre and post-training, Intra-class Correlation Coefficient (ICC) was used.

Students' reliability was good even before training (ICC=0,986 for the overall HGS score), with Tension above the eye area, and Strained nostrils appearing more challenging to be scored reliably. Previous researches demonstrated that these FAUs are generally more difficult to score than the others (Dalla Costa et al., 2016). Reliability improved after the 30 min training for the overall HGS score (ICC=0,992) and for each FAU (see Table 1). According to Cicchetti (1994), an ICC score between 0.75 and 1.00 can be considered excellent.

Our results suggest that the HGS scoring system is easy to apply even without any training; however, the training method applied proved useful to improve the reliability of HGS scores.

Table 1: ICC scores pre- and post-training for each Facial Action Unit and total HGS score.

Facial Action Unit	ICC Pre-training	ICC Post-training
Stiffly backwards ears	0,993	0,999
Orbital tightening	0,960	0,974
Tension above the eye area	0,878	0,979
Prominent strained chewing muscles	0,950	0,963
Mouth strained	0,926	0,980
Strained nostrils	0,851	0,918
Tot HGS score	0,986	0,992

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