

Thoroughbred Racing Injury Rates Are Inversely Associated with Trainer Success

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Thoroughbred racing injury rates for trainers at five meets were inversely proportional to the success of the trainer. This interrelationship was consistent at all five meets and suggests that training practices deserve greater scrutiny as a potential avenue for reducing the rate of injuries. Authors' address: Dept. of Clinical & Population Sciences, College of Veterinary Medicine, 1365 Gortner Ave., St. Paul, MN 55108. © 1997 AAEP.

1. Introduction

Many different risk factors have been demonstrated to have significant associations with the rates of musculoskeletal injuries of Thoroughbreds. For fatal injuries, the important role of pre-existing stress fractures has been illustrated by researchers in California.¹ Excessive cumulative exercise at fast speeds has also been implicated.² The cohort study of racing injuries at a single track in Minnesota illustrated that the risk of any musculoskeletal injury varied among trainers.³ The Japan Racing Association similarly identified training factors that were associated with higher risks of injury and embarked on an educational program for trainers that encouraged safer training practices.⁴

Racing regulatory veterinarians of the American Association of Equine Practitioners initiated a voluntary program of reporting equine racing injuries in 1992,⁵ and they continued the program through 1996 as the Equine Racing Injury Reporting System (ERIRS). A data form was filled out for each horse brought to the attention of the veterinarian on the racing surface. At the end of each meet, the data

were mailed to the University of Minnesota. These reports comprise a very large database for the study of racing injuries.

The objective of this study was to evaluate the relationship between the rate of musculoskeletal injuries and trainer success by using records from five Thoroughbred meets at three racetracks.

2. Materials and Methods

Data contributed to the ERIRS by a single veterinarian were analyzed from five consecutive race meets at three racetracks. The statistics summarizing trainer standings at the end of each meet were obtained from the meet's racing secretary's office. The injury rate for each trainer was calculated by dividing the number of injuries reported by the number of starts for all horses entered by that trainer. A success proportion for each trainer was calculated as follows: (number of first, second, or third place finishes)/number of starts. A multiple regression analysis assessed the relationship of the independent variable, success rate, and the dependent variable, injury rate, for each trainer.

NOTES

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3. Results

The proportion of injuries/starts for trainers ranged widely at each meet. At all five meets, trainer success was inversely related to injury rates but the shape of the regression line varied between meets. At the two shortest meets (5 and 6 weeks), the relationship was linear, whereas at the three longer meets the regression lines were quadratic, showing a slight to moderate upward deflection at higher success scores (>0.4). For the two short meets at which the regression equation was linear, the *R*-square values were 0.1362 and 0.6297. At the other three, *R*-square values were 0.4767, 0.4954, and 0.6531. Statistically, this can be interpreted as follows: trainer success accounts for 13.6% to 65.3% of the variability observed in trainer injury rates.

4. Discussion

The results of this study confirm that injury rates vary among trainers and that in general, the more successful trainers tend to have lower injury rates. The increase in injury rates at the highest levels of trainer success at the three longer meets suggests that the balance between successful training practices and maintenance of the horse's soundness may be shifted at this level of competition. The difference in the interrelationship between short and long meets may be caused by the greater number of starts per trainer at the longer meets or greater opportunity for horses to be injured. The consistency of the trainer success:injury rate relationships between meets and racetracks suggests that trainer factors may be more important determinants of injury rates than parameters related to the individual tracks.

If the trainers' rate of injuries during racing are similar to their rates of injury during training, the training practices of successful trainers with low

injury rates should be emulated. Ideally, these practices should be analyzed and, if possible, delineated and incorporated into educational programs for trainers, as has been done in Japan.

This study has illustrated that the rate of injuries observed during racing for each trainer is inversely related to the trainer's success. This relationship was best defined by a linear equation at the two shortest meets and a quadratic equation at the three longer meets.

This research was financially supported by the American Association of Equine Practitioners, the Association of Racing Commissioners International, the American Quarter Horse Association, and the Thoroughbred Racing Association.

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