

Prevalence of back pain and its risk factors in professional horse riders

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Horse riding is perceived as a dangerous sport mainly due to the possible severity of injuries. However, there is little information on health-related conditions/disorders arising from daily practice. The aim of this study was to assess the prevalence of back pain (BP), neck pain (NP), thoracic spine pain (TSP) and lower back pain (LBP) and to characterize not only the link between competitive riders' health and riding but also that between professional riders' health and the type of work undertaken. A questionnaire based on a standardized Nordic questionnaire for musculoskeletal symptoms, on lifestyle, medical history, health status and career was answered by 666 professional riders via the National Riding School websites. Replies from 258 professional riders were processed. The mean age of this sample of professional riders was 33 ± 11 years and included 27% men and 73% women (the same proportion as in the general riding population) with 23 ± 9 years riding experience and 10±9 years as professional riders. A multiple correspondence analysis identified four distinct clusters according to their predominant activity: "teaching riding", "horse riding", "grooming" and "training young horses". From clusters, Chi-squared test was calculated with 266 variables from the questionnaire. The results showed a high prevalence of NP (67%) and TSP (59%) in the last 12 months, a high prevalence of pain lasting over one month, and of chronic pain: 25% and 9% for NP, 24% and 13% for TSP and 33% and 23% for LBP. In particular, the cluster with "grooming" as the prevailing activity was most affected by pain lasting over one month and by chronic pain ($\chi^2=10.2$, $df=4$, $p<0.05$). This cluster comprised mainly women (85%), with average age of 33 years, having attended equine school (91%). In accordance with the literature, the prevalence of LBP in professional riders (75%) was not higher than in the general population and this pain reportedly disappeared during riding. Riding strengthens the paraspinal muscles, which are the same muscles that are rehabilitated in exercises prescribed by physiotherapists who recommend continuing of compatible activities. But in order to juggle professional activity and sport, 65% of professional riders with LBP consulted a physiotherapist ($\chi^2=5.24$, $df=1$, $p<0.05$) and 84% of them an osteopath. When the LBP was chronic, 75% consulted a physiotherapist ($\chi^2=13.9$, $df=1$, $p<0.001$). This epidemiological study established a link between back pain and the work conditions of a professional rider. Although no causal link was found between back pain and riding, one was found between back pain and walking activities like "grooming". Horse riding could even be considered as a form of physiotherapy for LBP.

Lay person message: No causal link was found between riding and back pain. The prevalence of back pain was very high for professional riders whose the main activity was "grooming". Horse riding could be considered as a form of physiotherapy for LBP. It is essential to separate the work aspects and sport to take into account professional riders' health and take preventive measures to protect careers and horse welfare.

Keywords: training, rider, stirrups, force, saddle, balance.