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Factors associated with high psychological distress in horse industry participants during the 2007 Australian equine influenza outbreak and evidence of recovery after 1 year

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This short report summarises data on the prevalence of high psychological distress in horse industry participants during the 2007 Australian equine influenza (EI) outbreak and the statistical analysis undertaken to identify the factors associated with this high psychological distress. In addition, follow-up data collected 1 year later are reported briefly.

Keywords equine influenza; horse industry; psychosocial effects

Abbreviations CI, confidence interval; EI, equine influenza; K10, Kessler 10; OR, odds ratio

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During Australia's first outbreak of EI in August 2007, government and the horse industry cooperated to put in place measures to control, contain and eradicate the disease. These measures included movement restrictions and quarantining of horse properties. This 'Human Impacts of Equine Influenza' study was conducted to assess the psychosocial effects of the disease outbreak and the control response.

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Materials and methods

Data were collected using an online survey. A link to the survey was sent out by the Australian Horse Industry Council to all recipients registered on the Horse Emergency Contact Database, which included individual horse owners and a number of horse industry groups and associations. Psychological distress was measured using the Kessler 10 (K10), a 10-item standardised measure used in research and many Australian population health surveys. The K10 produces a composite score between 10 and 50, with high psychological distress categorised as scores ≥ 22 . Very high levels (scores ≥ 30) are recognised as indicative of a diagnosable mental disorder. The K10 measure includes components of anxiety and depression. The prevalence of high psychological distress in the Australian general population is around 11-13%.

Results

Data were collected during the EI outbreak from 15 November to the end of December 2007 and 2760 sets of complete data were analysed. Respondents were from all states and territories, with two-thirds from New South Wales and Queensland. Extremely high levels of psychological distress were reported by respondents, with 34% reporting high psychological distress (scores ≥ 22). After controlling

for potential confounders, multivariate analysis revealed that those living in high risk infection (Red) zones (odds ratio (OR) 2.00; 95% confidence interval (CI) 1.57–2.55; $P < 0.001$) and disease buffer (Amber) zones (OR 1.83; 95% CI 1.36–2.46; $P < 0.001$) were at much greater risk of high psychological distress than those living in uninfected (White) zones. Even so, elevated levels of psychological distress were experienced by horse-owners nationally. Statistical analysis indicated that certain groups were more vulnerable to high psychological distress; specifically, younger people and those with lower levels of formal education. Respondents whose principal source of income was from horse industry-related activities were more than twice as likely to have high psychological distress than those whose income was not linked to these activities (OR 2.23; 95% CI: 1.82–2.73; $P < 0.001$). Further details of the analysis of the psychological distress data from the 2007 study have been published elsewhere.¹

Follow-up data were collected in December 2008 from 1011 respondents who had taken part in the first survey. Data for this matched group indicated that high psychological distress levels reduced from 36% in 2007 to 28% in 2008. Preliminary analysis using a paired t-test indicated that the mean K10 score reduced significantly from 2007 to 2008 (2007: 20.07, 95% CI 19.47–20.67; 2008: 18.60, 95% CI 18.03–19.16, $P < 0.0001$). Repeat multivariate analysis indicated that the EI control zone was no longer a significant factor. Although most groups showed noticeable reductions in high psychological distress, no evidence of recovery was noted for the youngest age group in the sample (16–24 year olds). Reported psychological distress in this group persisted at very high levels, around 50%.

Conclusion

Data from this study indicate an effect of EI on the psychological health and well-being of horse owners and horse industry participants during the outbreak. Those with financial dependence on the horse industry, with lower levels of formal education, in a young age group and those in more restricted EI control zones reported higher levels of psychological distress. One year after the first study there is evidence of recovery and specific EI-related factors are no longer associated with differences in psychological distress in the sample. However, distress levels appear to be persisting in younger respondents and this finding requires further investigation. Although methodologically this study has limitations, such as issues of general application because of sampling limitations, it does have good internal validity. The study findings may be used to inform those involved in assessing the potential psychological effects of not only animal disease control, but also human infectious disease control.

Disclosures

The authors have no competing interests to disclose.

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An insider's view of the lockdown at Moonbi during the Australian equine influenza outbreak

M Drury

Participants in the 1- and 2-day Tamworth Dressage Club (TDC) annual dressage championships arrived in Moonbi, New South Wales (NSW) as reports of the equine influenza outbreak surfaced on 25 August 2007. Three horses who had attended a competition in Maitland the weekend before had been showing flu-like symptoms and the next day the site was declared a suspect premise. On 27 August, infection was confirmed and the site was placed in total quarantine. Although most participants had travelled long distances to compete and did not have provisions for them or their horses, the quarantine was not lifted until 3 October, having a great social and personal impact on all those trapped in Moonbi.

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Keywords biosecurity; equine influenza; horse industry; psychosocial effects

Abbreviations DPI, Department of Primary Industries; EI, equine influenza; NSW, New South Wales; RLPB, Rural Lands Protection Board; SDCHQ, State Disease Control Head Quarters; TDC, Tamworth Dressage Club

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The home ground for the Tamworth Dressage Club (TDC) is at Moonbi, a small village situated 20 km north of Tamworth, New South Wales (NSW), on the New England Highway. The TDC ground is part of the Moonbi recreational grounds, which are also home to the Kootingal Pony Club, Kootingal Trotting Club, New