Dairy farmer attitudes and empathy toward animals are associated with animal welfare indicators

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Received 11 November 2009;
accepted 16 March 2010.
Available online 22 June 2010.

Abstract

Attitudes and empathy of farmers influence human–animal interaction, thereby affecting their behavior toward animals. The goal was to investigate how measures of attitude and empathy toward animals were associated with animal welfare indicators such as milk yield, mastitis incidence, fertility index, and the prevalence of skin lesions on cows. To assess empathy toward animals, a photo-based pain assessment instrument was developed depicting various conditions that could be associated with some degree of pain in cattle and included questions aimed at assessing attitudes toward animals. Photos of painful conditions are useful in eliciting measurable empathic responses to pain in humans. A total of 221 farmers were sampled via e-mail and 154 responses were obtained. In the first analysis, farmers were categorized into 2 groups according to their agreement or disagreement with the attitude statement "animals experience physical pain as humans do." In the second analysis, farmers were assigned a median pain assessment score obtained from their estimates on the visual analog scale of 21 conditions assumed painful for cattle. In the third analysis, farmers were clustered in 3 groups according to their visual analog scale responses. Three conditions were ranked as the most painful: fracture of tuber coxae, dystocia, and serious mastitis. Farmers with positive attitudes toward animals scored 2 points higher on their empathy score compared with farmers with negative attitudes. Personal experience with each additional condition resulted in a 0.09 higher score. Cluster analysis revealed 3 groups. Farmers in group 3 had the highest median pain assessment score (6.7 ± 0.2), indicating a high level of empathy and a positive attitude toward animals. They had the lowest prevalence of skin lesions over the carpus (24 ± 6%) and the lowest milk production (6,705 ± 202 kg). The complex associations between indicators of empathy and attitudes with relevant welfare outcomes suggest that competence building to safeguard animal welfare could benefit from including both attitudes and empathy in human–animal interactions studies.

Key words: dairy cattle welfare; empathy; attitude; milk production

Article Outline

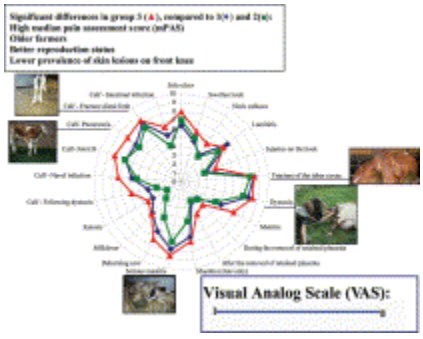

Figure 1. Farmers were clustered into 3 groups according to their overall continuous visual analog scale response pattern, which was obtained on a 10-cm blue line: 0 was recorded as no pain and 10 was recorded as unbearable pain. A spider web was used to visualize how the 3 groups varied on a median pain assessment score. Group 1 is the diamonds, group 2 is the squares, and group 3 is the triangles. Additionally, differences in possible demographic-related factors and some cow health-related variables were tested across the 3 groups. Group 3 differed from the other 2 groups according to skin lesions ($P < 0.03$) and milk production ($P < 0.04$), and tended to be different according to farmers' age ($P < 0.09$) and cows reproduction performance ($P < 0.07$). Photos shown are the 5 scored as most painful conditions from the questionnaire. Color version available in the online PDF.

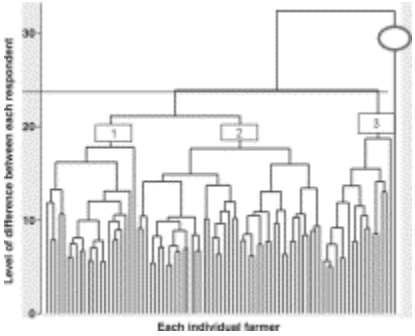

Figure 2. Results from the cluster analysis using the complete linkage application in Stata (Stata SE/10 for Windows, Stata Corp., College Station, TX). Three main groups were indentified. Each vertical line represents each response from each individual farmer who responded on the questionnaire on the 10-cm visual analog scale ranging from 0, recorded as no pain, to 10, recorded as unbearable pain. Farmers were shown photos of 21 painful conditions. The vertical line to the right identifies 1 farmer as an outlier (circled).

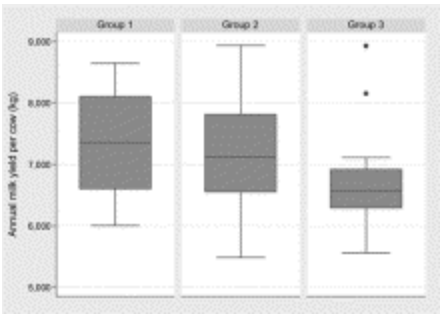

Figure 3. Distribution of milk production among the 3 groups of farmers identified in the cluster analysis considering the overall response pattern to the pain assessment scores in the 21 painful conditions included in the photo-based pain assessment instrument.